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**The Effects of the Family Work
Day on Family Time**

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The effects of the family work day on family time

Laurent Lesnard¹

The consequences for family time of a double participation to the labor market have not received a lot of attention yet despite the spectacular growing number of dual-earner couples. This paper addresses this issue using the two last French time-use surveys (1985-86 and 1998-99), two of the few surveys with time-use information from both spouses. The family time is derived from the 'with whom' variable and three kinds of family time are taken into account: conjugal time, father and mother time, and couple-children time. They have all considerably increased over the period studied. A classification of the family workdays is built using a special case of Optimal Matching Analysis. The shape of the family workday is highly correlated with the social position of spouses: the higher the social position of the spouses, the higher their synchronicity. Desynchronized work schedules are most of the time not chosen by couples but arise from the individual temporal requirements of their employers. In other words, desynchronization is a *negative temporal externality* affecting unequally dual-earner couples. It is negative for desynchronicity reduces the time spouses spend together, with or without their children. This negative effect is partially counterbalanced by an increase in the time fathers spend with their children. However, the strength of this effect depends on the scheduling of desynchronization and this additional father-child time is reduced to recreational activities (leisure and TV).

Les conséquences pour le temps familial d'une double participation conjugale au marché du travail n'ont pas reçu beaucoup d'attention en dépit de la spectaculaire augmentation du nombre de couples bi-actifs. Cet article aborde ce sujet à l'aide des deux dernières enquêtes françaises sur l'emploi du temps (Insee, 1985-86 et 1998-99), deux des rares enquêtes avec les emplois du temps des deux conjoints. Le temps familial est dérivé de la variable de co-présence et trois formes de temps familial pris en considération: temps conjugal, temps père- et mère-enfant, et temps parents-enfant. Ces trois types de temps familial ont considérablement augmenté sur la période considérée. Une classification des journées de travail conjugales est établie à l'aide d'une méthode d'appariement de séquences. Les types de journées de travail conjugales sont étroitement corrélés avec la position sociale des conjoints: plus elle est élevée et plus les horaires de travail des couples sont synchrones. La désynchronisation des horaires de travail est la plupart du temps imposée indirectement par les entreprises. En d'autres termes, la désynchronisation est une externalité négative pour les couples bi-actifs. Négative puisque la désynchronisation réduit le temps que les couples passent ensemble, avec ou sans leurs enfants. Cet effet négatif n'est que très partiellement contrebalancé par une augmentation du temps père-enfant. Cependant, la force de cet effet dépend de la répartition dans la journée de la désynchronisation et ce temps père-enfant supplémentaire est bien souvent réduit à des activités ludiques (loisir et télévision).

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Introduction

In 1984, two American sociologists, Paul Kingston and Steven Nock, were urging the social sciences community to reconsider the link between family and work. They were claiming that the rise of dual-earner couples was changing radically not only the way work is daily balanced within families but was also challenging the way social scientists analyze both work and the family. More than twenty years later, women of every economically advanced country seem firmly rooted in the labor markets. In France for instance, the labor participation rate of women age 25 to 49 towered to 80% in 2003 (Insee, ILO definition): dual-earner couples are now the dominant way of dividing paid labor between spouses.

Twenty years later, have social scientists taken into account this new familial dimension of work and/or this new work dimension of family? Yes and no: if we know a lot about the consequences of women work for various aspects of family life as for instance children well-being, we know little about how family time is daily balanced with work time for both spouses of dual-earner families. In particular, the degree of overlap of spouses' work schedules, also known as synchronicity, is still ignored by many analyses involving dual-earner couples.

One of the main reasons why this issue has received little attention is the lack of statistical tools to take into account the complexity of both synchronicity and family time. Social scientists interested in these questions used to think in terms of time-budgets: individual work days were reduced to the duration of work time and family time to activities directly connected to family, *i.e.* family time was reduced to direct child care activities. According to this implicit definition of work, a night shift and a 9 to 5 workday are the same because they have the same duration. Similarly, the time a family is gathered to watch TV is not registered as family time but as individual spells of TV activities.

The limits of time-budgets to analyze how work and family times are balanced are a good example of the more general problem of the epistemological consequences of statistical tools: methods are never neutral but necessarily entail a particular social philosophy (Bourdieu *et al.*, 1983). Time-budgets' two pillars are an individualistic approach and a simplification of time: the problem addressed is for an individual how to maximize the utility he gains from time. If this framework has proven its worth to analyze sociological issues such as the unequal division of domestic work between spouses, it is nonetheless inadequate to analyze the effects of the family work day on family time.

The title of this paper suggests a kind of causal relationship between the family work day and family time and this is the main thesis of this work. For the moment we should however use the more neutral expression of "the way work and family times are balanced". To address this research question we propose two reviews of literature: the literature on dual-earner couples and the issue of synchronicity and also the writings dealing with family time. To overcome the complexity of this issue, we propose then a new method to analyze the family work day and we combine it with an extended definition of family time.

The family work day and the issue of synchronicity

Graham Staines and Joseph Pleck (1983) can be credited with one of the first attempts to take into account the complexity of the work days of dual-earner couples. One of the chapters of their book is indeed dedicated to the "patterns of joint schedules and effect on family life" but unfortunately fails to do so. The authors are using the 1977 Quality of Employment Survey and work schedules are measured through two questions about usual work beginning and ending times. It has been proven that such methodology is inadequate for "making serious time use projections for the population" (Robinson 1985). Consequently, these individual approximations cannot be seriously combined for couples to provide a measure of their synchronicity.

This is unfortunately the same kind of data, this time from the Current Population Survey supplements on work, which Harriet Presser has been using in a series of articles focusing on the issue of synchronicity (1984, 1987). However, the adoption of a less ambitious analytical scheme (only standard and non-standard work schedules are distinguished) gives some credibility to the results obtained. Non-standard work schedules are highly correlated in the US with social position: only 10% of managers have non-standard work time, a figure which towers to 30% for the service workers (Presser 1987). Using the same dichotomic variable, Presser estimates that in 1980, 44% of American dual-earner couples are desynchronized (Presser 1984).

The same year, Steven Nock and Paul Kingston proposed three indicators to summarize what they call the *family work day*²: the “total family work time” (*i.e.* the sum of the work time durations of each spouse), the “length of the family work day” (*i.e.* the number of hours at least one spouse is working) and the “amount of off-scheduling” (*i.e.* the number of hours only one spouse is working). Unfortunately, the authors used the 1977 QES, but even if their results must be interpreted cautiously, desynchronization was very common among American dual-earner couples at that time (20% of them experience off-scheduling superior to 8 hour a day). Contrary to Staines and Pleck and to Presser, it is only once the family work day is described that they try to see its consequences (Kingston and Nock 1985): although this descriptive effort is quite cursory, it remains the first attempt to characterize simply desynchronization instead of rushing at models. Chenu and Robinson (2002) proposed a somewhat more elaborated version of this index to measure desynchronization which takes into account what they call structural desynchronization, namely the part of the non-overlap of spouses’ work schedules stemming from unequal work durations.

More recently, Daniel Hamermesh (2002) proposed an economic model of synchronicity within dual-earner couples and used the May supplement of the CPS to investigate empirically this issue. Hamermesh observes less night work but more work at the fringes of the standard workday. The scheduling of work time is highly correlated with earnings and these inequalities have considerably increased between 1973 and 1997 in the US. According to Hamermesh, these increased inequalities are responsible for the rise of desynchronization he observes over this period.

The family workday has not received much attention yet and two reasons account for this lack of results. First of all, American social scientists have had ideas on this issue but they lacked adequate data to test them. Serious analysis involving time cannot be undertaken without time-use data which methodology has been specifically design to circumvent the difficulty of this task. Secondly, usual statistical methods cannot deal appropriately with time data: classical techniques require time to be reduced either to durations or to indicators. It is certainly why most of the studies dedicated to the question of the synchronicity of dual-earner couples presented here skip the descriptive phase and focus on modeling. Applying a new method – which can be seen as a special case of Optimal Matching Analysis – Lesnard (2004a) was able to build a typology of the French family workdays using the 1986 and 1999 French time-use data. This method, which will be presented in more details in the next section, takes into account simultaneously the duration and the scheduling of work and gives a unique picture of the family workday.

Family time: where the conjugal time has gone?

The time of the family has been increasingly popular lately in the US but, again, it is Nock and Kingston who have pioneered this field. Family time is not a natural category of analysis in the

² The title of this article is a direct reference to this notion coined by Steven Nock and Paul Kingston. As words represent the stock of knowledge of a society (Elias, 1991), it was indeed crucial to reflect the changes occurring within families by *new words*. English readers might be interested to note that the English language is more advanced in this respect than other languages, French in particular. It is only very recently that words were tentatively used and proposed to denominate dual-earner couples (*couples bi-actif*). The scientific community has an important part to play here and in a way this linguistic slowness is also a *scientific delay* to acknowledge the situation experienced by 6.2 millions of French couples in 2002.

traditional framework of time-budgets (Budig and Folbre, 2004). Time-use surveys are indeed quite complex to analyze and have been traditionally reduced to primary activities, *i.e.* to the main activities declared as such by respondents. However, diaries have been designed to collect far more information than main activities, and in particular with whom those activities are done. Philip Stone (1972) is the first social scientist who has used this additional information to provide insights on sociability using time-use data. Aggregated results on parental time are given, without any details on the kind of activity done, for the twelve countries of the project coordinated by Alexander Szalai. Stone also presents national tempograms³ of parental time and it appears that France is standing out by the “highly ritualized allotments of time spent with children” in the morning, at noon, and in the evening. John Robinson (1977) also used the ‘with whom’ information but mainly as an illustration of the wealth of time-use data in a book not focused on family time.

More than ten years later, this broader definition of family time was for the first time used to address the question of what happens to time together when both spouses work (Kingston and Nock 1987). This time, Kingston and Nock used a time-use survey (1981 Study of Time Use) but limited time together to spouses and consequently did not take into account time with children: as a consequence, family time was reduced to conjugal time. Quite interestingly, the authors noticed that spouses had sometimes divergent views on time with one another: they thus preferred to keep both accounts. In 1981, American dual-earner couples spent every day 44 minutes watching TV together, 33 minutes in meals and 28 minutes in other leisure (wives’ account of conjugal time). Consistently with their previous work on the family work day, Kingston and Nock tried to assess the effect of desynchronization on dual-earners couples’ time together: the coefficient of the total amount of desynchronization appears negatively correlated with time together.

Nock and Kingston investigated one year later (1988) parental time with the same data. Two kinds of parental time were taken into account: father- and mother-child time. The problem of this definition is, from a parental perspective, that the time spent by both parents with their children is counted twice, once in the father-child time and another time in the mother-child time. The only solution is to define three kinds of parental time: both parents with children (parents-child time), only the father and his children (father-child time), and only the mother with her children (mother-child time). Parental time as defined by Nock and Kingston depends on the gender of parents: unsurprisingly, women are spending more time with children than men. More interesting is the kind of activities performed in presence of the children: unpaid work is the main activity done by women with their children whereas TV is for men the principal parental activity. Dual-earner couples spend less time with children than single-earner couples on weekdays but on weekend days dual-earner parents are catching up and in the end spend more time with their children than single-earner parents. The effect of desynchronization on parental time was introduced differently than previously⁴: rather than introducing the total amount of off-scheduling, Nock and Kingston used this time a series of variables indicating for certain moments of the day how many times each parent worked⁵. An important result arises: fathers spend more time with children, watching TV, only when their spouses are working late in the afternoon/evening and they are not. Consequently, it is only when mothers are working during after-school hours and their spouses are not that fathers do increase their contribution to parental work.

Since then, the interest of American sociology in family time seems limited to parental time, certainly because of the academic success of the concept of human capital: in such a perspective, measuring parental time trends is crucial (Bianchi, 2000). Thus a more economic approach of parental

³ A tempogram represents time-use data in a sequential form: for each time slot located on the horizontal axis is plotted on the vertical axis the proportion of the sample doing a certain activity (here spending time with children).

⁴ The authors took into account the comments of Sarah Fenstermaker Berk (1985): she argued that the scheduling of off-scheduling is of paramount importance for childcare. A quite similar argument can be found in Bianchi (2000): parents do not need to be present all the time during week days when children go to school.

⁵ The main drawback of this approach is to treat the family work day as completely disconnected individual work spells.

time has been proposed by Keith Bryant and Cathleen Zick (1996) using the Eleven State Time-Use Survey (1977-78), one of the rare US survey with information from both spouses. The authors' only interest is in testing a sophisticated econometric model of investment in human capital and presents only a somewhat cursory description of parental time that does not include a definition of what parental time is. For instance, it is impossible to know if spouses jointly or individually perform parental time. Contrary to Kingston and Nock, as we have seen, but also to Silver (2000) – who used Canada's high quality time use surveys – they did not find much unpaid work time spent by mothers with their children. The first parental activity in their sample is eating. These surprising descriptive results cast doubt on the quality of their dataset.

The definition of parental time is also a concern: father-child time and couple-child are presumably different. Cynthia Silver also demonstrates that father- and mother-child time decreases with the age of the children but that couple-child time, *i.e.* the whole family together, remains stable. It means that the time parents individually spend with children is more related to daily care, which is bound to disappear as children become self-sufficient. But self-sufficiency does not suppress all family sociability: family time is reduced but become more balanced between parents and children; it becomes truly time together and less parental time.

John Sandberg and Sandra Hofferth (2001) used a reversed procedure to study parental time: instead of using parents' account, they used children's. The 1997 Child Development Supplement of the Panel Study of Income Dynamics contained a diary for one or two children age 3-12 and filled in by the main caregiver. Father- and mother-time, as defined by Nock and Kingston, of this survey is compared to the 1981 in order to assess the hypothesis that the increase in the female labor force participation reduced parental time. Using a technique to disentangle structural and behavioral change, they show that if family changes are indeed associated with less time with children, these structural factors are outweighed by behavioral change.

In order to definitely put an end to this debate, Sayer *et al.* (2004) analyzed the change in parents' time with children observed in the 1965, 1975, 1985 and 1998 American time-use surveys. Even if they are focusing on direct childcare, this is the first time that parental time is analyzed in the long run. The more advanced and original method which the authors used to disentangle structural and behavioral factors in explaining the change in parental time allow them to neatly demonstrate that not only has parental time increased in the US since 1965 but it has increased *despite* negative structural factors linked to family changes. In other words, and contrary to the common sense, American parents have never spent so much time with their children.

With the exception of Kingston and Nock (1987) research on family time has been focusing almost exclusively on parental time. The fact that no contribution on conjugal time is to be found in the reference book edited by Nancy Folbre and Michael Bittman (2004) on family time is also highly significant: family time is conceptualized as care time. There is obviously a strong societal demand to address the question of childcare: as Nancy Folbre (1994) underlined, children are "public goods" *i.e.* their cost is private and is paid by families, particularly in the USA, but they benefit the whole society. Although social sciences are legitimate to cast light on this societal debate, it is a particularly challenging task, for societal debates are most of the time polluted by prenotions (Bourdieu *et al.*, 1983). One of the main perils related to the question of family time is certainly its underlying familism: familism's family time is homogeneous, positive, and desirable, and as such should be pursued by family members (Daly, 2001; see also Lenoir, 2003 for a socio-historical account of familism). But family time is also made up of tensions, arguments, physical violence and in some extreme cases can be even avoided (Hochschild, 1997). Another pitfall concerns the question of the balancing of family and work, a problem curiously affecting only women. The only solution is to construct from the same body of facts a new research object less sensitive to these biases.

A more substantial sociological issue

There is evidence that the increase in the female labor force participation rate and the consubstantial rise of dual-earner families is reshaping daily life, particularly because of the potential lack of synchronicity of couples' work schedules. Even if Harriet Presser (1986) failed to convincingly demonstrate that the lack of quality child care provisions in the U.S. was leading parents to split their work shifts in order to produce themselves quality childcare, there is no doubt that new forms of domestic division of labor and divisions of domestic have been arising.

This question, maybe quite mundane at first sight, is of considerable theoretical interest: the balance of work and family in daily life takes us back to the question of the intertwining of work and family ties. These two kinds of tie rest indeed on two opposed principles (Durkheim 1893, 1921; Adams and Steinmetz 1993). Work ties are based on what Durkheim calls "organic" solidarity: in economically developed societies, solidarity derives mainly from the position occupied in the production process and do not stem any more from ascribed positions in local communities (mechanical solidarity). Family ties have been taking the opposite path: family solidarity depends less on the familial division of labor and more on inter-personal bonds (mechanical solidarity). The contemporary family has been described as *conjugal* (Durkheim, 1921) or as *relational* (Singly, 1993) to emphasize these crucial changes.

These opposed changes are of course exaggerated. Work has not replaced totally communities as the main source of societal solidarity as the collective events of various sort (New Year's celebrations or the Independence Day in the USA and other Bastille Days), and, to a lesser extent, community life⁶ testify. Domestic solidarity also still depends on the domestic division of labor: despite an overall convergence trend in most economically developed countries, women still do most of the household chores (Gershuny and Robinson, 1988). Even if this double inversion of modes of solidarity between society and family is to a certain extent a theoretical construction, it is nevertheless a fact that the international treble gender convergence in the time spent in work, leisure and domestic labor (Gershuny, 2000) is a direct evidence of the dramatic solidarity changes that have been occurring.

These two ideal-types of solidarity are closely linked with time (Durkheim, 1912, Zerubavel, 1985), so that the dramatic changes occurring in daily life can be connected to social change. Mechanical solidarity is indeed associated with temporal symmetry: collective rhythm is in this case based on the alternate of strong collective moments with more individualistic phases (Durkheim 1912). Organic solidarity is the opposite: instead of having a single social rhythm, there is a multiplicity of sub-rhythms reflecting the fact that the basic principle of the division of labor, naming specialization, means that the different interdependent parts need coordination (Moore 1963, p. 135-138).

Economic fields appeared with national states (Durkheim, 1893, Elias, 2000 [1939]). The transition from home-based work to an industrial organization of labor based on specialization mean that workers do not do the same thing at the same time. Hence the main difficulty is to synchronize these different activities: "time [...] is a major factor in economic efficiency, and timing is a major factor in competitive success" (Moore, 1963, p. 137). Consequently, work time is in developed societies asynchronous, *i.e.* made of interdependent sub-rhythms. It is this salient property of work time that is responsible for the lack of synchronicity dual earner couples can experience: whether off-scheduling is chosen, accepted, or endured, it is first and foremost a consequence of how economic fields are organized and regulated.

The same transition from home-based work to an industrial organization of labor is also responsible for the weakening of the "things" in favor of the "persons" in family. As long as families used to be small economic units with a high degree of division of labor they were dominated by asynchronous rhythms: efficiency was prevailing. As domestic solidarity is relying less on efficiency and more on interpersonal relationships, collective activities, and especially discussions, are needed to create and

⁶ Community solidarity typically pertains to mechanical solidarity and has been declining in the USA (see Putnam, 2000), the country where it resisted certainly the most to industrialization.

sustain a shared principle of vision and division of the world, a domestic *nomos* (Berger and Kellner, 1964). Efficiency considerations have obviously not totally disappeared from the family and a certain degree of division of labor remains: cooking, cleaning, tidying up, etc., but also raising children are activities that in theory preserve asynchronicity within families. Nevertheless, domestic solidarity in differentiated societies depends more on time together and consequently requires *synchronicity*: without congruent individual schedules, there is no togetherness, and no mechanical solidarity.

As a result, the solidarity principles of work and family are potentially conflicting: economic efficiency requires workers to be desynchronized whereas family stability needs synchronicity. This temporal conflictuality used to be buffered when only one spouse was involved in the labor market, at the expense of a higher division of labor between spouses⁷. The situation is radically different for dual-earner couples: asynchronicity can reach its highest point and change the familial trade-off between mechanical and organic solidarity. Asynchronicity means for instance that couples can share more equally their household duties, such as caring for their children, but this childcare efficiency is at the expense of togetherness.

Consequently, behind the question of the daily balance of work and family for dual-earner couples lies the more general question of the conflict between two opposites modes of social integration. From this more general perspective, the positive consequences of the increase in female labor force participation on parental time (Sayer *et al.*, 2004) suggest that the transition from single- to dual-earner couples, *i.e.* the decrease in families' organic solidarity, is indeed associated with an increase in mechanical solidarity as measured by parental time. The goal of this article is to complement this analysis by considering family and work time in all their complexity. Family time is not only parental time but encompasses also conjugal time, which is all the more crucial since dual-earner couples' solidarity depends theoretically primarily on mechanical solidarity. Eventually, three different components of family time are considered here: conjugal time (spouses without any children), parents-child time (spouses and at least one child), father- and mother-child time (only one spouse with at least one child). Taking into account the full complexity of work time means that the number of work hours and their scheduling is to be considered at the level of the couple.

The analysis plan of this article is first to describe the family workday, then the family time. The second step consists in looking at how the family workday interacts with the family time of dual-earner couples. Beforehand the two French time-use surveys analyzed here, as well as the method used to build a taxonomy of the family workdays, are presented

Data and method

The two last French time-use surveys (1985-86 and 1998-99) present the incomparable advantage for this study of containing diaries for couples. The two surveys were done in person by the French Institute of Statistics (INSEE) over a year⁸ and had high response rates (64.7% and 80%). One-day diaries were collected, but with 5-minute and 10-minute time slots: comparability can be an issue but unpublished methodological studies⁹ suggest that problems are likely to be minor and limited to very specific sequences of activities (clearing the table vanishes in having meal for instance). Work and family time, which measurements are yet to be presented, should not be too affected by this methodological difference. Note that in order to make easier the comparison of the family work day

⁷ Male breadwinner families can be thought as an intermediate step between the situation where economic activity is completely embedded into families and the configuration where a great part of this activity is externalized for both spouses.

⁸ With the exception of summer and Christmas holidays.

⁹ Alain Chenu, personal communication.

typologies between 1986 and 1999, the analysis was performed on the two merged datasets: 50% of the time slots of the former have been dropped¹⁰.

Number of respondents	1985-86	1998-99
Individuals	16,047	15,441
Households	10,372	7,460

Table 1 - Sample sizes of the two last French time-use surveys

In the following analysis, weights are not used, for two reasons. First, weights provided by INSEE do not correct the slightly unequal distribution of days within the week: they were calculated as if time-use surveys were standard questionnaire investigations, disregarding the fact that it is not individuals who are observed but individuals-day. Therefore, the correct procedure would have been to work out our own weights using census information and the basic fact that there are always seven days in a week. Second, since the statistical technique used here to analyze sequentially family work days was completely new, we had to implement it ourselves in SAS and to simplify this task, we did not include the possibility of using weights. This is nonetheless possible and will be included in the next version of this program¹¹.

Work schedules as sequences: a new method to classify the family work days

In order to describe the everyday work experience of dual-earner couples, it is necessary to take into account work hours and their scheduling not only for each spouse but also for both spouses simultaneously. As we saw, Nock and Kingston (1984) tried to break up the family workday into three indexes. The problem of this numerical approach is that it is subsequently difficult to have a meaningful overview of family workdays. The best way to describe family workdays is through a typological approach but the difficulty is then to find a suitable distance measure to gather similar work schedules and separate dissimilar ones. Such measure should use all the information present in the diaries of time-use surveys but also should respect the timing of events: an 8-hour workday from 9 to 5 is very different from an 8-hour night shift. Lesnard (2004a) proposed to use a special case of Optimal Matching Analysis with no insertion-deletion (indel) operations but with substitution costs derived from the transition matrices between the different states of the process considered.

Optimal Matching Analysis, or Optimal Matching (OM) was introduced in social sciences mainly by Andrew Abbott (Abbott and Forest 1986, Abbott 1995, for a review see Abbott and Tsay, 2000). This family of methods can be seen as a way to measure the dissimilarity between pair of sequences. As a consequence, OM is only generating dissimilarity matrices and additional statistical analysis dealing with dissimilarity objects, such as clustering, are needed. The degree of similarity of two sequences is determined by the difficulty to match them with the help of three basic transformations: insertion, deletion, and substitution.

Contrary to substitution operations, insertion and deletions of events loosen the connection of processes with the temporal scale. In the case of work schedules, insertion and deletion operations are altering the connections between work schedules and the day. As the goal of applying OM here is precisely to analyse jointly the number of work hours and their scheduling, these temporal distortions should be avoided, hence insertion and deletion operations not used. Consequently, only substitution

¹⁰ This is not to say that 50% of the information has been dropped since 5-minute activities represent less than 5% of the activities reported in diaries.

¹¹ A Stata plugin implementing weights has been developed since the first version of this article was written. The impact of weights on the results presented in this article is being investigated but the first results suggest quite limited effects, certainly because of the high quality of the French data. The Stata plugin is freely available for windows and mac OS on the personal web site of the author.

operations have been used and their costs have been derived from the series of transition matrices between the different states defined. A high transition rate between two states at a given date indicates that these two states are close since the probability of switching states is high whereas a low transition rate suggests that the two states are, at that particular date, quite distinct, in other words that they belong to different sub-rhythms.

For instance, if individual schedules are studied and two states are defined, work and non work, then since starting to work is quite usual at 9 am, it is impossible to say that these two states are very dissimilar. On the contrary, working at 9 pm is likely to be less common and a schedule with work at that time would be considered as very different from another with no work spell at 9 pm. This dissimilarity measure is consequently endogenous and dynamic, reflecting the fact that time is socially structured (working at 9 am is different from working at 9 pm) and that this social structuration is mirrored by collective rhythm (the sociological name of the transition matrices)¹².

Type of dual-earner couple	1985-86	1998-99
Childless	425	330
With children	1,038	781
Sub-total	1,463	1,111
Total	2,574	

Table 2 - Number of dual-earner couples with work the day observed

This method is applied to the pooled French time-use surveys in order to make comparisons between 1985 and 1999 easier¹³. All days with at least 10 minutes of paid work for both spouses have been considered for the analysis: rather than deciding arbitrarily from which minimum duration family days were to be considered as jointly worked, we preferred to adopt the widest definition possible and to let the comparison method and the clustering algorithm gather themselves family work days with few work hours. The combined sample size is considerable (see Table 2). Spouses' individual diaries are simplified and combined to describe family workdays with the help of four elementary states, or in other words, family workdays are described as processes evolving in a 4-state universe:

1. No spouses work
2. Only the husband works
3. Only the wife works
4. Both spouses work

Thus, the proximity between two any family workdays at t is given by the intensity of the average transitions rates for the whole sample between $(t-1)$ and t and t and $(t+1)$. The dissimilarity matrix obtained by applying this rule is then submitted to a standard clustering algorithm¹⁴.

An extensive definition of family time

We take here the widest definition of family time which use the 'with whom' information collected in the diaries. This extensive definition is indeed required if the two different types of domestic are to be seen. When reduced to primary activity, only the component of family time relative to efficiency

¹² See Durkheim (1912) for more details on the link between time and collective rhythm.

¹³ Results are unchanged whether the two datasets are pooled or not: it is just to make comparisons easier that only the pooled results are presented here.

¹⁴ The beta-flexible algorithm, or flexible WPGMA (Weighted Pair Group using arithMetic Averages), has been used here. See Milligan (1980 and 1989) for a review of the advantages of this method: the flexible WPGMA is better than the Ward algorithm, especially when noise and outliers are present. Furthermore, the Ward algorithm requires the additionnal assumption that the distance produced by the OM algorithm is euclidean, a strong assumption given the close relation of the method used to the Hamming distance, related to the non euclidean Manhattan distance (L_1).

(care) is considered whereas we are interested here in how the organic and the mechanical types of solidarity are indeed related to the division of paid work and its everyday organization.

To measure family time as defined, we need to reduce the variety of events described by spouses to a meaningful subset of categories. We use here a slightly refined version of the coding scheme proposed by Kingston and Nock (1987). Paid work is included as a potential family activity (see Table 3) in order not to exclude this older form of organic sociability still present in some couples, as for instance farmer couples.

Activity number	Activity
1	Paid work
2	Unpaid work (routine domestic chores)
3	Travels
4	Meals (outside the workplace)
5	Conversations
6	Leisure
7	TV
8	Care
9	Semi-leisure (gardening, knitting, etc.)

Table 3 - Family activity nomenclature

Based on this nomenclature, three family time categories are defined, using couples' description of with whom they are:

1. Conjugal time: each spouse declares to be with the other
2. Parents-child time: each spouse says to be with the other and with at least one child
3. Parent-child time, which is composed of father- and mother-child time: each spouse claims to be alone with at least one child

Conjugal and parents-child time is symmetrical family time, theoretically linked to mechanical solidarity, whereas father- and mother-child time is asymmetrical family time, *i.e.* time related to efficiency considerations. Unfortunately, it is not possible to apply this definition for the 1998-99 survey: children were not distinguished from spouses in diaries' with whom item. It is therefore not possible to make a difference between parents-child time and conjugal time¹⁵. For this reason, the analysis will focus mainly on the 1985-86 results.

Findings

The family work days

Eight types of family workdays arise (see Table 4). The most frequent work days for dual-earner couples is the combination of two 8-hour work days centered on 1 am: this category represents 49% of the family work days in 1985-86. If this sort of workday is considered as the reference, then other forms of family workdays can be characterized as atypical.

¹⁵ With the additional hypothesis that parent-child time does not happen simultaneously, *i.e.* that both spouses never spend time alone with a child simultaneously, it is possible to measure it. Since in 1985-86 simultaneous parent-child time is nil, this hypothesis will be assumed in the remaining of this article.

Type of family work day		1985-86				1998-99			
		%	Duration of the husband's work day	Duration of the wife's work day	Synchronicity (%)	%	Duration of the husband's work day	Duration of the wife's work day	Synchronicity (%)
Standard	Double standard work day	49	8:36	7:54	72,8	44	9:02	8:20	70,1
Atypical	With long hours	8	11:04	8:51	57,7	10	11:15	9:36	57,8
	With shifted schedules	14	7:05	7:07	23,9	15	7:06	7:16	23,3
	- in the morning for men	8	6:34	6:48	31,0	8	7:01	7:02	29,9
	- in the evening for men	4	7:21	7:39	22,1	4	6:34	8:08	23,4
	- perfectly shifted	3	8:15	7:16	5,4	3	8:02	6:56	4,2
	With a partially worked day by women	12	8:54	4:49	36,9	16	9:07	5:18	36,5
	With short/irregular work hours	17	5:47	4:15	27,0	15	6:45	4:46	31,9
Total		100	8:09	6:53	52,4	100	8:39	7:18	50,5

Table 4 - Types of family workdays in 1985-86 and 1998-99

Atypical family workdays deviate from this reference in four main ways. The family workday with long work hours is characterized by at least one workday whose duration is superior to 10 hours. The shifted family workday is composed of shifted individuals workdays: schedules can be shifted in the morning, in the afternoon, in the evening, or in the night. Another source of atypicality is stemming from women who partially worked. Eventually, a less clear cut group gathers family work days with short or irregular work hours for at least one spouse.

Standard family work days represents in 1999 only 44% of total family work days. About 70% of the work time of these spouses is simultaneous¹⁶ (synchronous) and consequently conjugal non-work time is highly synchronized. The standard family work day potentially makes room for time together, but of course whether this time is indeed at the service of the strengthening of mechanical solidarity remains to be shown: this is precisely the aim of this article.

However, a lot of family workdays deviate from this standard and the trend, poorly measured by two dates, is upward. Since atypical workdays are characterized by less synchronicity, it means that desynchronization substantially increased between 1985 and 1999¹⁷. Logically, when at least one spouse is working more than 10 hours, synchronicity is smaller, by twelve points. This situation of potential reduced sociability affects one dual-earner out of ten.

The most dramatic decrease in synchronicity is nonetheless not due to overwork but to couples' shifted work schedules. The average synchronicity rate is for these couples a low 23%; a figure that can be almost nil for totally shifted couples (3% of the family work days). Most of the time, family workdays are shifted in the morning for husbands and in the afternoon for wives. This configuration is theoretically appealing for it means that fathers are at home (or can be available) when children come back from school: mechanical solidarity could be traded in these families for a more equal division of parental labor.

¹⁶ Synchronicity percentage are calculated as the ratio of the number of hours of simultaneous work over the number of hours at least one spouse works (what Nock and Kinston, 1984, calls the "length of the family work day").

¹⁷ This increase in desynchronization is in all likelihood not restricted to France but concerns to a certain extent all economically developed countries: to our knowledge the desynchronization trends has only been analyzed by Daniel Hamermesh (2002) who also reported a significant increase for the USA.

Not surprisingly, when women worked partially the day observed, synchronicity is rather low (37% in 1999). However, if this desynchronization comes to a large extent from spouses' unequal work durations, it is also due to a significant part to shift work in these reduced schedules: in other words, part-time work is also quite often shifted work. Some of this part-time shifted work occurs in the evening, *i.e.* at the moment of the day which is theoretically the more favorable to family time: part-time work is not necessarily family friendly.

Type of family work day		Social position of the husband							Total	
		Self-employed	Cadres Executives	Media and culture positions	Head clerks	Salesmen and domestic service occupations	Clerks	Health, workers, drivers, police officers		Factory workers
Standard	Double standard work day	34	66	43	55	43	65	34	37	46
Atypical	With long hours	27	4	1	7	24	0	14	5	10
	With shifted schedules	8	4	7	12	0	20	28	28	15
	With a partially worked day by women	16	15	13	15	19	15	11	18	16
	With short/irregular work hours	16	10	34	11	14	0	13	12	14
Total		100	100	100	100	100	100	100	100	100

Table 5 - Some social positions of the husband and types of family workdays in 1998-99

These different types of family workdays are not randomly distributed among dual-earner couples: synchronicity depends to a large extent on the social position of spouses¹⁸ (see Table 5). When husbands are *cadres* (the highly qualified and best paid employees), 2 family workdays out of 3 are standard whereas for factory worker families the odds are of 1 to 3. As a general rule, the highest the social position of couples, the more synchronicity. These inequalities are in fact the transposition for couples of the inequalities observed for individuals (Lesnard, 2004b).

More precisely, this is the position occupied in the economic field that matters, *i.e.* this is social position *and* the kind of occupation, which are of course closely related. Agents located high up the social space are also those who have the more freedom to choose their schedule and who have on average the longest work hours. These agents invest a lot in work because their dispositions are perfectly adjusted to this field. This kind of situation can be adequately represented by the *game* metaphor used by Bourdieu (2003) or the *exploit* image suggested by Gershuny (2005): the best players are completely filled with the game and what is at stake so that they do spare hour of work.

However, these long work hours are relatively¹⁹ standard from a scheduling point of view. The kind of occupation does not really matter contrary to the agents located low down the social space: if they have a much higher probability of having atypical work schedules, the kind of atypicality depends on the characteristics of the job. For instance, if it is well known that factory workers can operate round the clock in eight-hour shifts, and have consequently shifted schedules in the morning and in the night,

¹⁸ The social position of spouses is approximated here by those of male spouses. Two efficiency reasons can be evoked for making such an approximation. First, given social homogamy, it is often necessary to know only the social position of one spouse to locate couples in the social space. Second, the French coding system of social position (*Professions et Catégories Socioprofessionnelles*) is still quite androcentric: it is easier to identify the social positions associated with male occupations, so that the social position of couples is better approximated using male social positions.

¹⁹ Relatively only because long work hours necessarily mean that some work hours are located at the fringes of the standard work day (9 to 5). As a matter of fact, work hours are often overflowing in the evening for this category of agents (Lesnard, 2004b).

the unskilled workers employed in the service industry also can have atypical work schedules but made of full or part time shift work in the afternoon or in the evening, staggered schedules and other highly irregular work schedules.

Type of family work day		Determination of each spouse's work day				Total
		Imposed on both spouses (51%)	Imposed on one spouse (27 %)	Decided by both spouses (10 %)	Other (12 %)	
Standard	Double standard work day	43	51	79	38	48
	Atypical					
	With long hours	4	7	5	9	6
	With shifted schedules	21	16	4	12	17
	With a partially worked day by women	19	15	8	18	17
	With short/irregular work hours	14	11	5	22	13
Total		100	100	100	100	100

Table 6 - Determination of work schedules for employed couples in 1998-99

Work schedules are imposed by firms (Table 6): only 10% of the couples considered they had some freedom to choose their schedules. Therefore, the lack of synchronicity is also indirectly imposed by firms, through the determination of individual work schedules: couples who can decide their schedule overwhelmingly have synchronized schedules but couples whose work schedules are imposed have almost half chance of having a standard family work day. Consequently, desynchronization is not spouses' choice but is most of the time individual work schedule inequalities imposed by firms on employees located low down the social space that become desynchronization at the level of couples. Moreover, these flexibility requirements have increased since 1985, leading to a dramatic increase in desynchronization for families of unskilled workers. This is why the title of this article suggested a causal link between the family workday and family time: work schedules are seldom chosen and therefore are potentially constraining family time. Before this assertion is demonstrated, family time is presented.

Family time

When there are no children, family time is reduced to conjugal time (Table 7). The main conjugal activities in 1985 was having meals and watching TV. Other leisure is also one of the major kinds of activities done together by spouses. On average, spouses spent almost three hours and a half daily with one another. Conversations as defined in time use surveys, *i.e.* declared as a main activity, are quite residuals, obviously because most of them occur while doing something else. It seems that there is a strong dividing line between conjugal and non conjugal activities: meals, TV, leisure travels and unpaid work can be conjugal whereas paid work and semi-leisure are, in most couples without children, exterior to family²⁰. The fabric of conjugal time is made not of deep discussions but of more mundane daily activities: even unpaid work is a quite substantial part of conjugal time, although women do most of it alone.

²⁰ As care is strongly related to children, it is ignored here.

Activity	Conjugal time	Non conjugal time	
		Husbands	Wives
Paid work	0:04	2:38	1:52
Unpaid work	0:19	1:06	3:30
Travels	0:16	0:42	0:32
Meals	0:55	0:37	0:32
Conversations	0:05	0:14	0:11
Leisure	0:44	1:48	1:18
TV	0:54	0:58	0:38
Care	0:04	0:50	1:01
Semi-leisure	0:02	0:53	0:36
Total	3:23	9:46	10:10

Table 7 - Family time in 1985-86 for couples with no child at home (hours and minutes per day)

Except for a few couples who work together²¹, paid work but also semi-leisure – made up of sewing, mending, knitting, car and appliances maintenance, and gardening – are completely exterior to family. In other words, what remains of the self-sustaining dimension of the family is associated with desynchronization. Domestic work is of course another remains of this dimension and men and above all women still perform it alone but it is somewhat more integrated into daily life, hence in to conjugal life. This confirms the theoretical connection between collective organization and time together: when division of labor is high, synchronicity is low, and as a corollary, activities marked by efficiency requirements are desynchronized. Even if a great part of the self-sustaining dimension of the family, namely paid work, has been externalized, there is still some self-production of goods and services in households that prevent domestic solidarity from becoming solely based on interpersonal relations.

Activity	Conjugal time	Non conjugal time	
		Husbands	Wives
Paid work	0:01	2:17	1:44
Unpaid work	0:24	0:59	3:34
Travels	0:12	0:33	0:25
Meals	1:09	0:37	0:33
Conversations	0:02	0:05	0:07
Leisure	0:59	2:30	1:46
TV	1:16	1:19	0:53
Care	0:04	0:47	0:53
Semi-leisure	0:04	1:19	0:34
Total	4:11	10:26	10:29

Table 8 - Family time in 1998-99 for couples with no child at home (hours and minutes per day)

Conjugal time increased by about 50 minutes between 1985 and 1998. TV watched together has soared and is the new number one conjugal activity²² (see Table 8). This increase in time together lends credibility to the weakening of organic solidarity and the consubstantial strengthening of mechanical solidarity, at least in couples without children. However, this increase has not yet, and probably never will, completely obliterated division of labor and asynchronicity, even if collective unpaid work slightly increased since 1985.

Family time is radically different for couples with children (see Table 9). Spouses' time together spent in daily activities is logically transformed into parents-child time: this is especially true for meals, which become the family time *par excellence*. This is less true for TV and other leisure: only a part is transferred to parents-child time from conjugal time. Nonetheless, TV and other leisure are also two of

²¹ These couples are found most of the time in the following self-employed occupations: farmer, shopkeeper, craft workers, but also some professions like pharmacists.

²² Nock and Kingston (1987) found similar results for the USA in 1981.

the main parents-child activities. Conjugal time consequently shrinks drastically and TV becomes the most popular activity spouses spend time together in.

Activity	Family time						Non family time	
	Conjugal	Parents-child	Father-child	Mother-child	Total conjugal	Total parental	Husbands	Wives
Paid work	0:02	0:00	0:01	0:01	0:02	0:02	4:08	2:19
Unpaid work	0:05	0:04	0:04	0:37	0:09	0:45	0:46	2:46
Travels	0:03	0:06	0:03	0:10	0:09	0:19	0:48	0:33
Meals	0:08	0:27	0:02	0:10	0:35	0:39	0:37	0:30
Conversations	0:01	0:01	0:01	0:03	0:02	0:05	0:13	0:13
Leisure	0:09	0:15	0:05	0:10	0:24	0:30	1:13	0:56
TV	0:15	0:12	0:06	0:08	0:27	0:26	0:51	0:34
Care	0:01	0:01	0:06	0:35	0:02	0:42	0:45	1:05
Semi-leisure	0:00	0:00	0:01	0:03	0:00	0:04	0:30	0:17
Total	0:44	1:06	0:29	1:57	1:50	3:32	9:51	9:13

Table 9 - Family time in 1985-86 for couples with children (hours and minutes per day)

Not surprisingly, mother-child time is much higher than father-child time, and as Nock and Kingston found for the USA in 1988, the predominant mother-child activity is not care but unpaid work: in everyday life, the dividing line between domestic chores and parental responsibilities is non-existent and since women are in charge of most of those two kinds of unpaid work, they have to develop multitasking, or polychronous capabilities (Hall, 1983). Fathers' time alone with their children is limited to a few minutes here and there, but mostly concentrated on TV and other leisure, as Nock and Kingston also found.

Quite interestingly, couples with children have less symmetrical family time (*i.e.* conjugal or parents-child time) than childless ones: the presence of children is indeed connected to more organic solidarity, families becoming more like small factories, gender factories (Berk, 1985), that are committed to maximize the time they put into raising children. In this respect, care activities, most of them being linked to young children (Silver, 2000), are disproportionately carried out by women while men spend time with older children in leisure and TV activities. Not only do women spend more time with children than do men, but the content of parental time is also gendered: daily care, as well as other daily domestic chores, are women's responsibility, whereas the few minutes French fathers spend with their children are mainly recreational activities (almost 40% of the father-child time and only 15% of the mother-child one).

Family time increased by three hours between 1985 and 1999: conjugal and parents-child time increased by one hour, and father- and mother-child time also increased each by one hour (see Table 10). This absolute increase is for men almost a revolution given the level of father-child time in 1985: this one-hour increase is in relative terms a 200% soar. Whereas women were spending four times as much time alone with children in 1985 than men, twelve years later, mother-child time is "only" twice as much father-child time. However, the content of father-child time remains marked by gender: above all, men spend more time with their children in leisure or TV. Not in young children care, which increased only by 4 minutes. On the contrary, the number one mother-child activity is more than ever household chores: time spent in those activities in presence of children increased, revealing the greater daily tensions women are facing. Even if the gender differences in the total time spent with children has considerably decreased, the gender differences in the kind of time spent with children have increased.

Activity	Family time			Non family time		With 1985-86 conjugal and parents-child ratio	
	Conjugal and parents-child	Father-child	Mother-child	Husbands	Wives	Conjugal	Parents-child
Paid work	0:04	0:05	0:05	4:08	2:19	0:04	0:00
Unpaid work	0:16	0:10	0:53	0:46	2:46	0:08	0:07
Travels	0:10	0:08	0:18	0:48	0:33	0:03	0:06
Meals	0:50	0:13	0:22	0:37	0:30	0:11	0:38
Conversations	0:03	0:01	0:03	0:13	0:13	0:01	0:01
Leisure	0:43	0:14	0:23	1:13	0:56	0:16	0:26
TV	0:49	0:20	0:17	0:51	0:34	0:27	0:21
Care	0:07	0:10	0:40	0:45	1:05	0:03	0:03
Semi-leisure	0:02	0:05	0:03	0:30	0:17	0:00	0:01
Total	3:04	1:26	3:04	9:51	9:13	1:13	1:50

Table 10 - Family time in 1998-99 for couples with children (hours and minutes per day).

Symmetrical family time (conjugal plus parents-child time) has also expanded, but less than asymmetrical family time (father- and mother-child time). Since it was not possible to distinguish between the spouse and children in the 1998-99 diary, it is not possible to have more details for symmetrical time. This is not really important since these two kinds of family time are closely linked and made up of meals, TV, and other leisure, whose duration have all gained ground in 1998-99. With the additional assumption that the ratio between conjugal and parents-child times has remained constant, then it is possible to infer absolute durations (see the two last columns of Table 10). These contradictory evolutions of family time reflect the fact that children are family members and participate to the collective life of family but are also dependant members that must be taken care of and as such introduce efficiency considerations that translate into asymmetrical family time.

The consequences of the family work day on family time

Logically, the more the family workday is synchronized, the more spouses spend time together (Figure 1). Synchronicity preserves conjugal time but the most desynchronized spouses do not have the lowest time together: when children are present, conjugal time is likely to occur in the evening in front of TV, when children have gone to bed. Consequently, desynchronization is harmful to couples when it occurs in the evening: completed shifted schedules are composed of a quite standard work schedule with a night shift so that, the beginning and the ending of the day of spouses are quite synchronized: the beginning of the day worker is the end of the day of the night worker and *vice versa*. Of course had synchronized sleep been taken into account, conjugal time would not have been that synchronized. Nevertheless, it is when men have a shifted work schedule in the evening that (awake) conjugal time is the lowest.

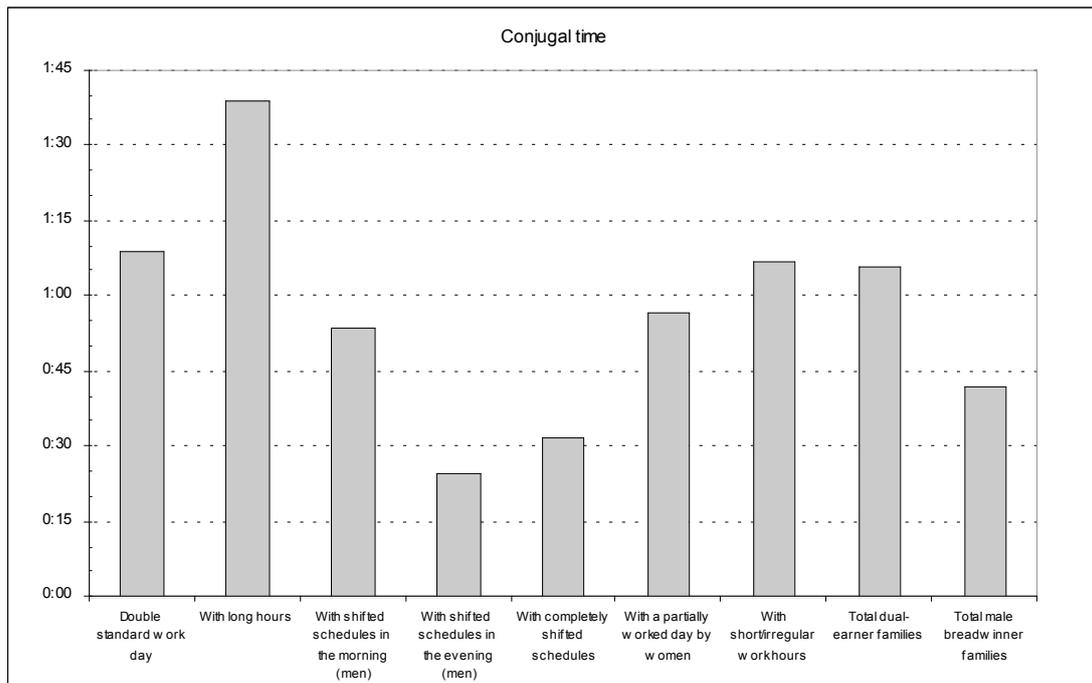


Figure 1 - The consequences of the family workday on conjugal time in 1985 for couples with children

Quite strikingly, conjugal time for families where only the husband is working outside the home is quite low, in any case, lower on average than dual earner-couples' time together. This result suggests that, overall, the generalization of dual-earner couples can be related to more symmetrical conjugal rhythms, or, in other words, to more mechanical solidarity. However, this is not true for all types of family work day: when desynchronization is too strong and is occurring at a strategic moment of the day, then mechanical solidarity is higher in male breadwinner families.

Family work days with at least a long work day are on the contrary associated with the highest conjugal time: long work days are indeed generally quite standard in terms of the scheduling of working hours, so that spouses can spend time together. However, this type of family work day is less favorable for parents-child time as Figure 2 shows: since at least one spouse is coming back home late in the evening, family as a whole spend less time together.

It is when men have their work schedule shifted in the morning that parents-child time is the highest: this kind of family work schedule is compatible with the school clock and even if parents are quite desynchronized, the whole family is synchronized at the key moment of the day, namely at the end of the afternoon/ beginning of the evening. When men are working in the evening, whether because they have a long workday or because their schedule is shifted in the evening, then parents-child time is lower. It is interesting to note that perfectly desynchronized spouses have almost the same level of parents-child time than perfectly synchronized spouses: in both cases, the beginning and the end of the day are synchronized²³.

²³ Completely desynchronized work schedules are however problematic on weekends, when the spouse with the reversed standard day must re-synchronize his awake life with his family and the rest of society.

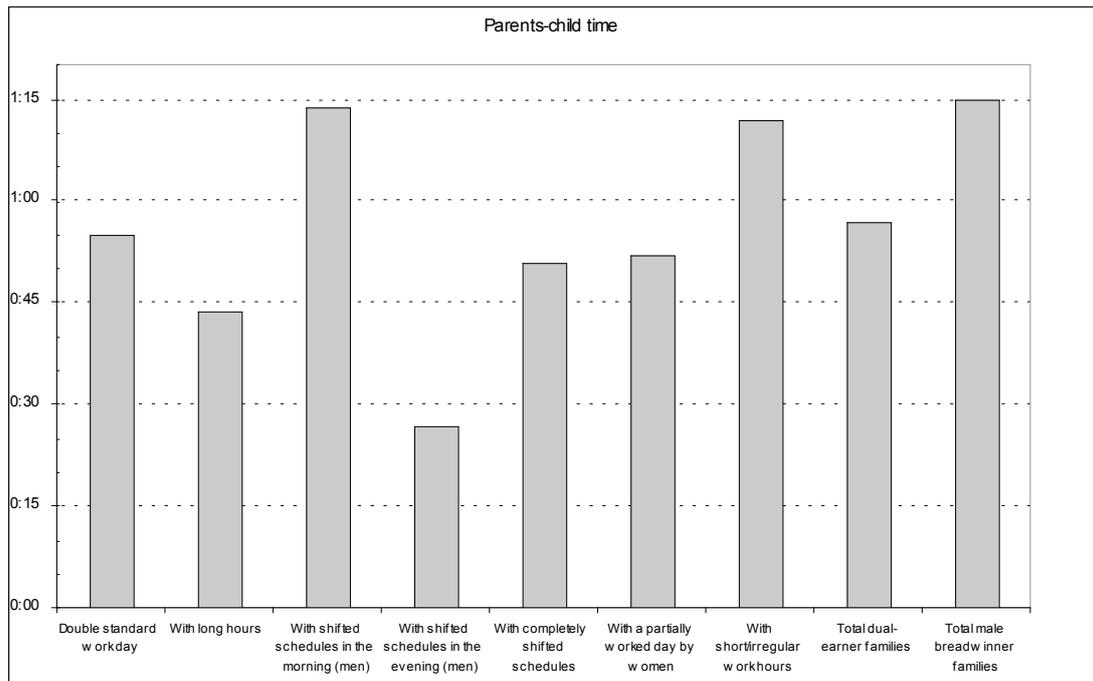


Figure 2 - The consequences of the family workday on parents-child time in 1985 for couples with children

Except families where husbands have shifted schedules in the morning, dual-earner couples cannot compete with male breadwinner families in terms of parents-child time. The most familial component of family time requires all family members to be synchronized, a general synchronization all the more difficult to reach as two family members are working outside the home. However, total symmetrical family time, *i.e.* conjugal and parents-child time, is the same for dual-earner and male breadwinner couples, although conjugal time is in theory more important for domestic solidarity (see Figure 5). Consequently mechanical solidarity is also playing an important part in the couples with a higher degree of division of labor, but the structure of this symmetrical family time is however different: there is less conjugal time and more parents-child time than in dual-earner couples.

It is father-child time which is the component of family time the most sensitive to the scheduling of work (see Figure 3). Fathers with a standard family workday are quite similar to fathers in male breadwinner families: they spend approximately half an hour daily alone with their children. Logically, it is when fathers have a long workday that they spend the less time with their children. However, when they have desynchronized work schedules with their partners, they spend more time alone with their children: they spend all the more time as their work schedule is synchronized with schools' closing time. A more detailed analysis (not shown here) reveals that this father-child time remains largely gendered, *i.e.* fathers spend more time with their children but this time is mainly dedicated to watching TV or other recreational activities, a result previously found by Nock and Kingston (1988).

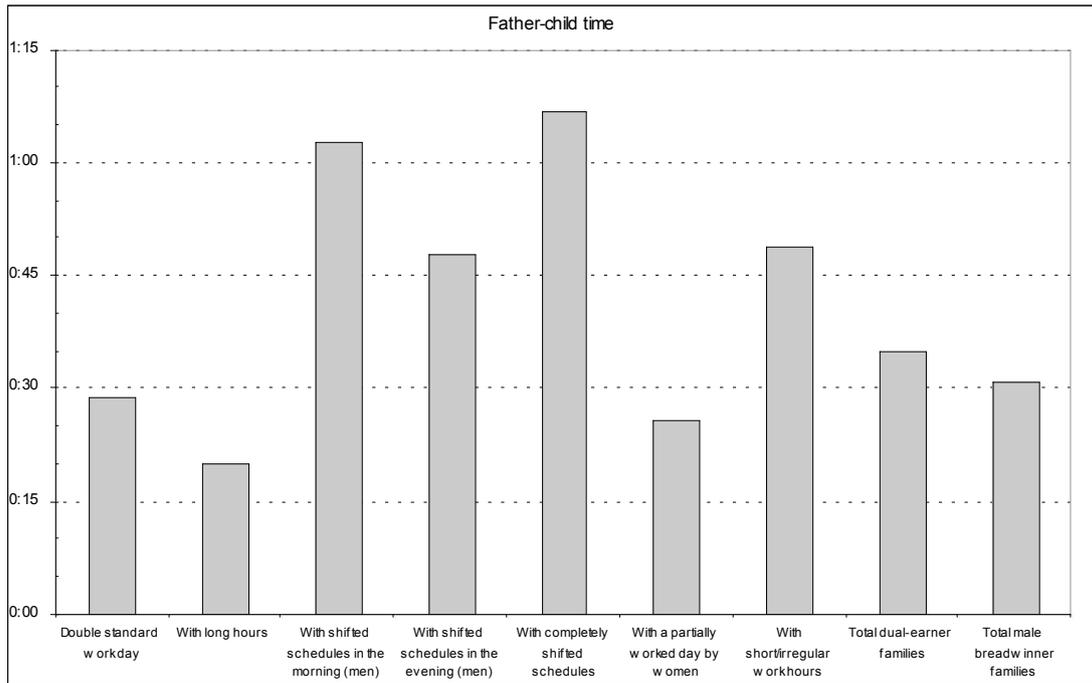


Figure 3 - The consequences of the family workday on father-child time in 1985 for couples with children

Mother-child time is less sensitive to the type of family workday. As for men, desynchronization is associated for women with more time alone with their children. Of course, women with a paid work cannot compete with housewives. However, housewives' mother-child time is not that higher: as Bianchi (2000) observed, children who reach school age (3 and sometimes even 2 in France) are not at home during a consequent number of hours during the day, so that the parental gain is in the end quite small.

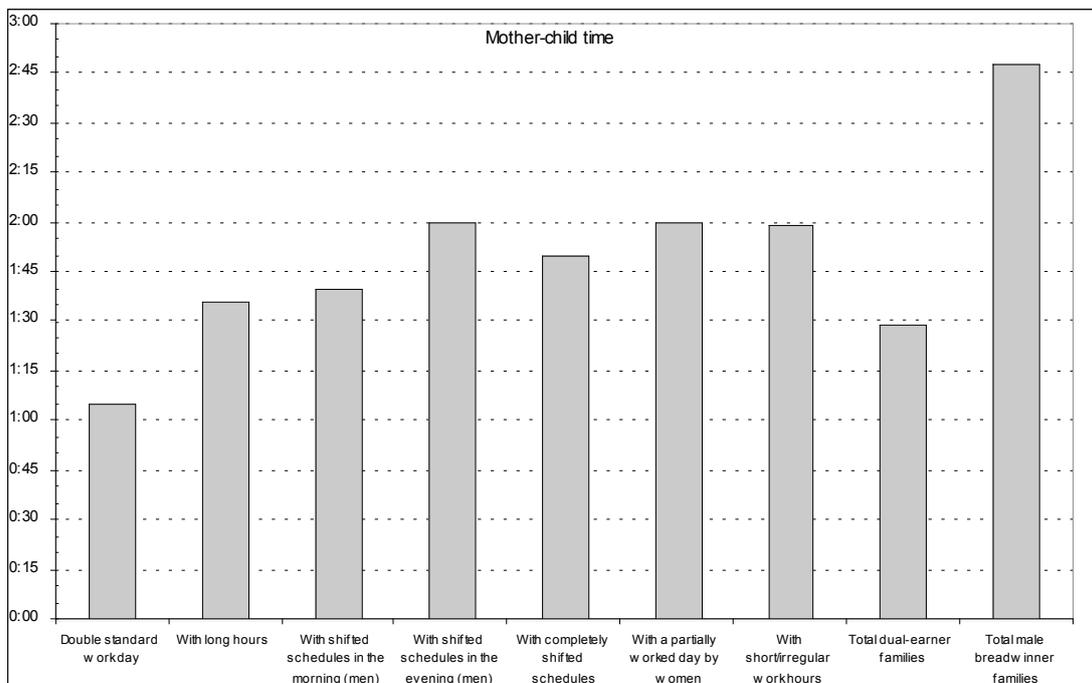


Figure 4 - The consequences of the family workday on mother-child time in 1985 for couples with children

Figure 5 shows that, overall, dual-earner couples have relatively more symmetrical family time (conjugal and parents-child time) than male breadwinner families: asymmetrical family time, *i.e.* father- or mother-child time is far less developed. Consequently, the thesis that the main source of family solidarity has changed is, with this definition of family time and on average, true: mechanical solidarity is more important, in particular its conjugal component, when both spouses are participating to the labor market.

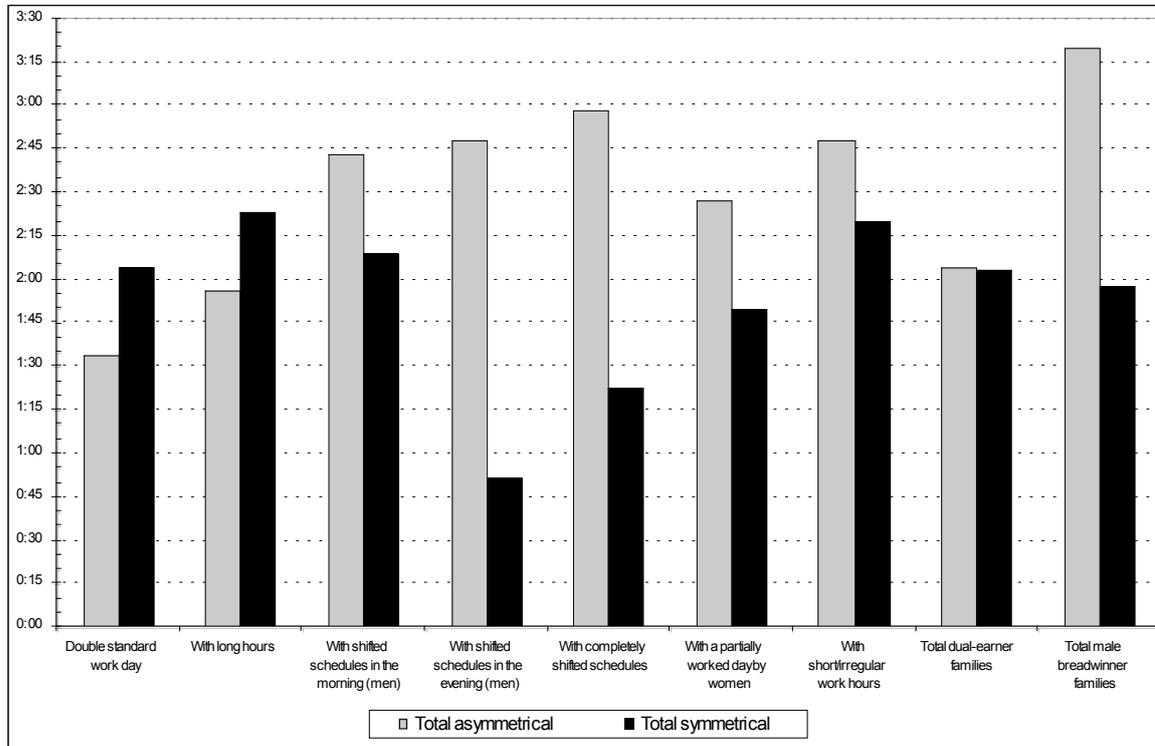


Figure 5 - The consequences of the family workday on asymmetrical (father- and mother-child time) and symmetrical (conjugal and parents-child time) family time in 1985 for couples with children

But this general picture must be corrected by taking into account desynchronization: the more desynchronized spouses' work schedules are, the more asymmetrical family time is (*i.e.* the time spent by each spouses separately with children). It means that the average situation for dual-earner couples is hiding considerable variations and that when work schedules are shifted, mechanical solidarity is again lower than organic solidarity. Desynchronization favors the division of the parental labor at the expense of time together. It is interesting to note that the symmetrical family time associated with the family work days with shifted schedules in the morning for men is slightly higher than couples with double standard work day. Desynchronization is not always negative in this respect and its scheduling must be taken into account: the particularity of this type of family work day is that men are coming home earlier in the afternoon than most other men usually do, whether they work long hours or a 9 to 5 schedule. There is of course nothing magical in this: coming back home at 4pm means that the end of the work day of fathers coincides broadly with schools' closing time. Consequently, and quite obviously, the daily balance of work and family life must also take into account school opening hours: without integrating this crucial parameter, it is not possible to understand why the effects of desynchronization are so variable. And why taking an average off-scheduling index does not good results.

However, dual-earner couples' asymmetrical family time is radically different from male breadwinner families' one (see Figure 6): the most desynchronized spouses are also sharing more equally parental work, even if the content of this parental time remains gendered. Overall, dual-earner couples are more egalitarian but there are two important exceptions: when men are working much more than women, whether because men are working more than 10 hour a day or because women work part-time, the gender differential in parental work is logically extremely close to that of male breadwinner families.

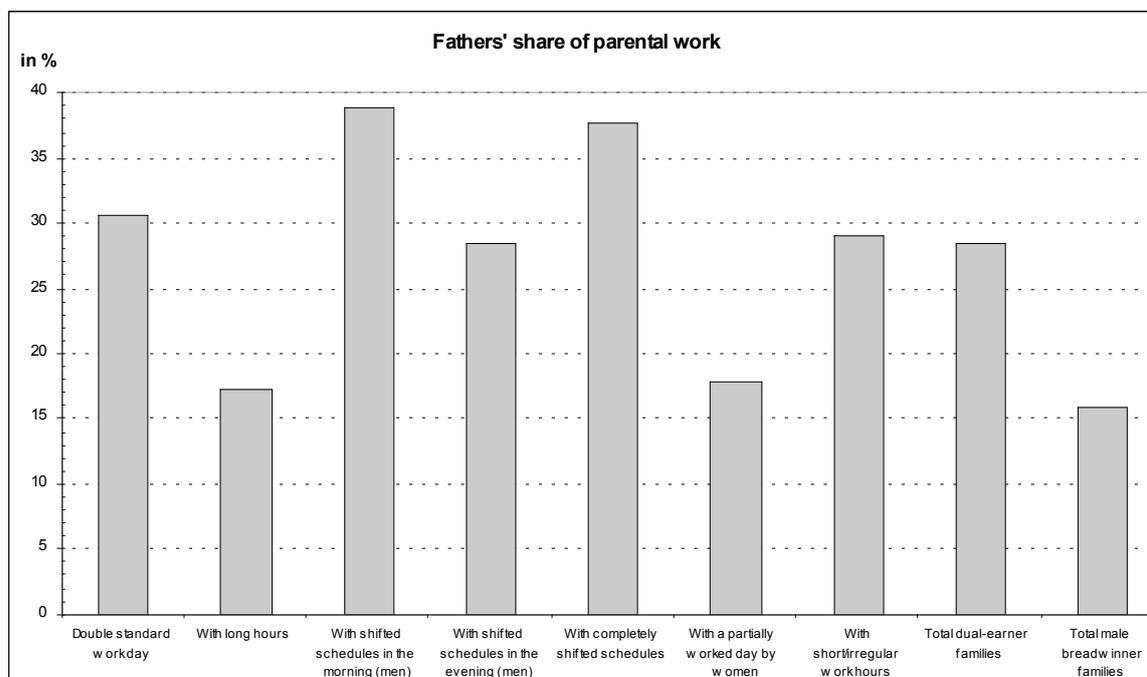


Figure 6 – Fathers' share of parental work in 1985 for couples with children

Discussion and conclusion

The varied forms of the daily organization of work within dual-earner couples have huge consequences on family time. Overall, and consistently with sociological theory, mechanical solidarity is larger among dual-earner families whereas it is the division of labor and organic solidarity which predominates for male breadwinner families. However, desynchronization is altering to a large extent this aggregated result: the more their work schedules are synchronized, the more couples are close to the ideal of modern family, centered on interpersonal relationships, with a more equal division of parental work than in male breadwinner families. But as to desynchronized couples, symmetrical family time is less developed and organic solidarity remains high.

However, this division of labor is dramatically different from these in male breadwinner families where the workload is divided between *specialized* spouses, either in paid *or* unpaid work. In desynchronized dual-earner families, both spouses are taking in charge paid *and* unpaid work. This new division of labor obviously remains somewhat specialized: men are still investing more in paid work than women and these ones are still in charge of the bulk of unpaid work. Nonetheless, parental time is more equally shared among dual-earner couples, and all the more that fathers' work schedules are synchronized with school's closing hours. Dual earner couples where women work part time and/or men have long workdays are in this respect closer to the traditional division of labor with specialized roles.

It is the triple synchronization of the schedules of fathers, mothers and children that matters: when fathers²⁴ come back home late at night, either because they work long hours or their work schedule is shifted in the evening, they are desynchronized with the rest of their family. In this regard, weekends are of paramount importance: they help family to synchronize at the level of the week. Weekend work is then particularly damaging for families given that schools are generally closed on those days: in this case, each hour of work is almost completely at the expense of family.

But desynchronization is not affecting randomly dual-earner couples: synchronicity is on the contrary highly correlated with social position. In other words, the way work and family are daily balanced is to a large extent socially determined. Couples of executives who can decide their schedules have more conjugal and parents-child time than couples of factory workers. They opt for synchronized work schedules and appear in this respect quite *fusional*, in complete opposition with the results obtained from surveys which collect only spouses' representations on their organization (see Widmer *et al.*, 2004 for instance). Even if taking shift to care for children, or dependent adults, can be a choice, it is not true *on average*: couples do not choose, but rather *adapt to* shifted schedules.

The responsibility of firms is indirect: they have of course nothing to gain from imposing desynchronized work schedules. But the scheduling of work is a crucial management resource for firms, whether they operate in the industry, where equipment use is a concern, or in the service sector, with the issue of opening hours. Most of the employees have not much freedom to determine their work schedules and these constraints cumulate for dual-earner couples: only one atypical work schedule is required to desynchronize dual-earner couples. Because of social homogamy, individual inequalities become stronger at the level of the couple.

Consequently, the volume and the structure of family time is also homologous to the social position of spouses: the higher their social rank, the more symmetrical and the less asymmetrical is family time. As a result, couples located high up the social space are not the families where parental work is the most equally shared: the new forms of parental organizations are to be found in the desynchronized couples, poorly socially endowed. However, this greater gender equality in the division of parental work is not due to parents' intention to do so but arise merely from the accidental synchronization of fathers' work schedules with school closing time fostered by firms' economic strategy.

Desynchronization is not a choice and as a consequence the greater implication of fathers with their children is fragile. Evidence of this fragility can be found in the strong gendered dimension of the time these accidentally egalitarian fathers spend with their children: when they are back at home, they do what they are used to do, namely watching TV and other recreational activities. Rather than taking care of children, fathers are going about their usual business at home and just put up with children. Most of fathers have not integrated unpaid work in their daily sequences of activities. As a disposition, *i.e.* as a structured and structuring system of action, caring for children or maintaining the household is not only a matter of being present but of knowing what to do, when and how, of anticipating the various needs, in sum it is all this feminine domestic expertise that women have acquired during their childhood through socialization.

The greater gender equality observed is, so to speak, a *trompe-l'oeil*: it is hiding highly structuring gender dispositions. Changing such deeply rooted dispositions certainly takes time and desynchronization can play a part only in the long run: by forcing men to spend time with their children, desynchronization may affect long term gender dispositions. However, it will take all the more time that this desynchronization is not chosen and habits are still based on the traditional gendered division of labor. Desynchronization is therefore typically a *negative externality*: private and social costs of atypical work schedules are dramatically diverging, which is the characteristic of an externality, and in addition, as desynchronization is affecting adversely symmetrical family time

²⁴ This is obviously also true for women, but statistically, this situation is less frequent.

whereas its beneficial consequences on asymmetrical family time are bound to vanish, this is a negative externality.

These results have implications for policy: balancing work and family life is not only an issue for women but a major conjugal and social question. The replacement of male breadwinner by dual-earner families requires new modes of division of domestic and parental labor. And new temporal rights for families, given that desynchronization is to a large extent a negative externality produced by firms. In this respect, the law passed in 2003 in the UK which forces employers to pay attention to employees' request for more family friendly work schedules is an important first step. However, as the law does not coerce employers to agree these requests, firms do not have to *internalize* their negative externalities.

References

- Abbott, Andrew and Forrest, J. (1986). "Optimal Matching Methods for Historical Sequences", *Journal of Interdisciplinary History*, Vol. 16, No. 3, 471-494.
- Abbott, Andrew and Tsay, Angela (2000). "Sequence analysis and optimal matching methods in sociology", *Sociological Methods and Research*, 29, 3-33.
- Abbott, Andrew, (1995). "Sequence Analysis: New Methods for Old Ideas", *Annual Review of Sociology*, Vol. 21, 93-113.
- Adams, Bert N. and Steinmetz, Suzanne K. (1993). "Family Theory and Methods in the Classics", in Pauline G. Boss and William J. Doherty and Ralph LaRossa and Walter R. Schumm and Suzanne K. Steinmetz, *Sourcebook of Families Theories and Methods*, New York and London, Plenum Press.
- Berger, Peter and Kellner, Hansfried (1964). "Marriage and the Construction of Reality: An exercise in the microsociology of knowledge", *Diogenes*, No. 46, 1-23.
- Berk Fenstermaker, Sarah (1985). *The Gender Factory: The Apportionment of Work in American Households*, New York, Plenum Press.
- Bianchi, Suzanne M. (2000). "Maternal employment and time with children: dramatic change of surprising continuity?", *Demography*, 37, 401-414
- Bourdieu, Pierre; Chamboredon, Jean-Claude et Passeron, Jean-Claude (1983). *Le métier de sociologue. Préalables épistémologiques*, Mouton, Paris and The Hague.
- Bourdieu, Pierre (2003). *Méditations pascaliennes*, Paris, Seuil.
- Budig, Michelle J. and Folbre, Nancy (2004). "Activity, proximity, or responsibility? Measuring parental childcare time", in Folbre, Nancy and Bittman, Michael (ed.) *Family time: the social organization of care*, London and New York, Routledge, 51-68.
- Bryant, W.Keith and Zick, Catherine D. (1996). "An Examination of Parent-Child Shared Time", *Journal of Marriage and the Family*, Vol. 58, No. 1, 227-237.
- Chenu, Alain and Robinson, John P. (2002). "Synchronicity in the work schedules of working couples" *Monthly Labor Review*, No. 125, 55-63.
- Daly, Kerry J. (2001). "Deconstructing Family Time: From Ideology to Lived Experience", *Journal of Marriage and Family*, 63, 283-294.
- Durkheim, Émile (1893). *De la division du travail social*, Paris, Alcan.
- Durkheim, Émile (1912). *Les formes élémentaires de la vie religieuse*, Paris, Alcan.
- Durkheim, Émile (1921). "La famille conjugale", *Revue philosophique*, No. 90, 9-14.
- Elias, Norbert (1991). *The Symbol Theory*, London, Thousand Oaks et New Delhi, Sage.
- Elias, Norbert (2000 [1939]). *The civilizing process*, Blackwell. Translation by Edmund Jephcott of *Über den prozeß der zivilisation: soziogenetische und psychogenetische Untersuchungen*, 1939.
- Folbre, Nancy (1994). "Children as Public Goods", *American Economic Review*, 84, 86-90.

- Folbre, Nancy and Bittman, Michael (ed.) (2004). *Family time: the social organization of care*, London and New York, Routledge.
- Gershuny, Jonathan (2000). *Changing times: work and leisure in postindustrial society*, Oxford, Oxford University Press.
- Gershuny, Jonathan (2005). "Busyness as the badge of honour for the new superordinate working class", *Working Papers of the Institute for Social and Economic Research*, paper 2005-9.
- Gershuny, Jonathan and Robinson, John P. (1988). "Historical changes in the household division of labor", *Demography*, 25, 537-552.
- Hall, Edward T. (1983). *The Dance of Life, The Other Dimension of Time*, Garden City, Anchor Press/Doubleday.
- Hamermesh, Daniel S. (2002). "Timing, Togetherness, and Time Windfalls", *Journal of Population Economics*, Vol. 15, No 4, 601-623.
- Hochschild, Arlie Russel (1997). *The time bind : when work becomes home and home becomes work*, New York, Metropolitan Books.
- Kingston, Paul W. and Nock, Steven L. (1984). "The Family Work Day", *Journal of Marriage and the Family*, Vol. 46, No. 2, 333-343.
- Kingston, Paul W. and Nock, Steven L. (1987). "Time Together Among Dual-Earner Couples" *American Sociological Review*, Vol. 52, No. 3, 391-400.
- Lenoir, Rémi (2003). *Généalogie de la morale familiale*, Paris, Seuil.
- Lesnard, Laurent (2004a). "Schedules as sequences: a new method to analyze the use of time based on the collective rhythm with an application to the work arrangements of dual-earner couples", *Electronic International Journal of Time Use Research*, Vol. 1 63-88.
- Lesnard, Laurent (2004b). "Temporal segregation", unpublished paper presented at the IATUR conference in Rome.
- Milligan, Glenn W. (1980). "An Examination of the Effect of Six Types of Error Perturbation on Fifteen Clustering Algorithms", *Psychometrika*, 45, 325-342.
- Milligan, Glenn W. (1989). "A Study of the Beta-Flexible Clustering Method", *Multivariate Behavioral Research*, 24, 163-176.
- Moore, Wilbert E. (1963). *Man, Time, and Society*, New York and London, Wiley.
- Nock, Steven L. and Kingston, Paul W. (1985). "Consequences of the Family Work Day", *Journal of Marriage and the Family*, Vol. 47, No. 3, 619-629.
- Nock, Steven L. and Kingston, Paul W. (1988). "Time with Children: The Impact of Couples' Work-Time Commitments", *Social Forces*, Vol. 67, No. 1, 59-85.
- Presser, Harriet B. (1984). "Job Characteristics of Spouses and their Work Shift", *Demography*, Vol. 21, No. 4, 575-589.
- Presser, Harriet B. (1986). "Shift Work among American Women and Child Care", *Journal of Marriage and the Family*, Vol. 48, No. 3, 551-563.
- Presser, Harriet B. (1987). "Work Shifts of Full-Time Dual-Earner Couples: Patterns and Contrasts by Sex of Spouse", *Demography*, Vol. 24, No. 1, 99-112.
- Putnam, Robert D. (2000). *Bowling alone: The collapse and revival of American community*, New York, Simon & Schuster.
- Robinson, John P. (1977). *How Americans Use Time*, New York, Praeger.
- Robinson, John P. (1985). "The validity and Reliability of Diaries versus Alternative Time Use Measures", in Juster, F. Thomas and Stafford, Frank P. (ed.) *Time, Goods, and Well-Being*, Ann Arbor: Institute for Social Research, University of Michigan, 33-62.
- Sandberg, John F. and Hofferth, Sandra L. (2001). "Changes in Children's Time with Parents: United States, 1981-1997", *Demography*, Vol. 38, No. 3, 423-436.
- Sayer, Liana C., Bianchi, Suzanne M. and Robinson John P. (2004). "Are parents investing less in children? Trends in mothers' and fathers' time with children", *American Journal of Sociology*, Vol. 110, No. 1, 1-43.

- Silver, Cynthia (2000). "Être présent : le temps que les couples à deux soutiens passent avec leur enfants", *Tendances sociales canadiennes*, No. 11-008.
- Singly, François de (1993). *Sociologie de la famille contemporaine*, Paris, Nathan
- Stone, Philip J. (1972). "Child care in twelve countries", in Szalai, Alexander (ed.) *The use of time. Daily activities of urban and suburban populations in twelve countries*, The Hague, Paris, Mouton, 249-264.
- Staines, Graham L. and Pleck, Joseph H. (1983). *The Impact of Work Schedules on the Family*, Ann Arbor, University of Michigan.
- Widmer, Éric, Kellerhals, Jean, and Levy, René (2004). "Quelle pluralisation des relations familiales ? Conflits, styles d'interactions conjugales et milieu social", *Revue française de sociologie*, 45, 37-67.
- Zerubavel, Eviatar (1985). *Hidden Rhythms: Schedules and Calendars in Social Life*, Los Angeles, University of California Press.