The effects of the family work day on family time

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The rise of dual-earner couples reshapes the relations families used to have with work. The consequences for family time of this dual participation to the labor market have not received a lot of attention yet. The family time is derived from the `with whom' variable of the last two French time-use surveys (1985-86 and 1998-99): the three kinds of family time taken into account (conjugal time, father and mother time, and couple-children time) have considerably increased during the period studied. A classification of the family work days is built using Optimal Matching Analysis. The lack of synchronicity affects differently the different categories of family time: the more synchronous couples are, the more symmetrical family time is but the less are father and mother times. Consequently, desynchronicity *can* lead to a more egalitarian way of parenting. The correlation between the social position of couples and their synchronicity is further emphasized.

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 work day are the same so long as they both 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.

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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 time 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 having done 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 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": 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 were 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, naming 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 work day. 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 work day 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 address it empirically. 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 of 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 (2004) was able to build a typology of the French family work days using 1986 and 1999 time-use data. Since we are going to use the same typology further, we do not present the results now.

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 traditional framework of time-budgets. Time-use analyses 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. John Robinson (1977) is, to our knowledge, the first time-use analyst who has used this additional information to provide insights on sociability using time-use data. But Robinson's use of the 'with whom' information was at that time only intended to illustrate the wealth of time-use data and was not driven by an interest in the 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 happen 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 view 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 appear negatively correlated with time together.

Nock and Kingston investigated one year later (1988) the 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 (couple-child time) only the father and his children (father-child time) and only the mother with her children (mother-child time). The parental as defined by Nock and Kingston depends on the gender of the parent: 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 performed 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 week days 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 previously: rather than introducing the total amount of off-scheduling, Nock and Kingston used this time a series of

variables indicating for certain moment of the day how many time each parent worked. An important result arises: fathers spend more time with children watching TV only when their spouses are working at the end of the day and they are not. Consequently, only when mothers are working during after-school hours and their spouses are not then 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 a human capital perspective, measuring parental time trends is crucial. Thus a more economic approach of parental 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 which does not include a definition of what parental time is. For instance, it is impossible to know if parental time is jointly or individually performed by spouses. Contrary to Kingston and Nock – and, as we are going to see, to other analyses of parental time – they did not find much unpaid work time spent by mothers with their children. The first parental activity in their sample is eating. Yet, the significance of the interlocking of domestic and parental work is also emphasized by a Canadian study on high-quality time-use data (Silver 2000). 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 child care, this is the first time that parental time is analyzed on 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, contrary to the common sense, American parents have never spent so much time with their children: the social competition is so strenuous that parents have to join forces to keep their children in the race.

A more substantial sociological issue

However, the relation between family and work times has been mainly reduced to the impact of women's participation to labor force on parental time. In doing so, social scientists reduced family time to parental time, and parental time to investment in human capital. And yet, it has been proven that a double participation to the labor force has complex effects on daily life, in particular because of the possibility of off-scheduling of spouses. Even if Harriet Presser (1986) failed to 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, the question of the balance of work and family in the everyday life of dual-earner couples is still pending.

This question, maybe quite mundane at first sight, is of a considerable theoretical interest: the balance of work and family in daily life takes us back to the question of the intertwining of work tie and of family tie. These two kinds of ties rest indeed on two opposed principles (Durkheim 1893, 1921; Adams and Steinmetz 1993). Work ties are based on what Durkheim calls "organic" solidarity: in developed societies, solidarity derives mainly from the position occupied in the production process and do not stem any more from ascribed positions in communities (mechanical solidarity). Family ties have been taking the opposite path: family solidarity depends less on the division of labor and more on inter-personal bonds (mechanical solidarity). These two ideal-types of solidarity can be linked with time (Zerubavel 1985). Mechanical solidarity is associated with temporal symmetry: social rhythm is in this case based on the alternate of strong collective moments with more individualistic phases (Durkheim 1912). Organic solidarity is in this case the opposite: instead of having a single social rhythm, there is instead a multiplicity of sub-rhythms reflecting the fact that the basic principle of the division of labor, naming specialization, means that the different parts of the system are interdependent and coordinated (Moore 1963, p. 135-138).

Applied to work and family, it means that work time is in developed societies asynchronous, i.e. made of different sub-rhythms whereas family time is based on temporal symmetry, in other words on time together. Collective activities, and especially discussions, enable families to create and sustain a shared principle of vision and division of the world (Berger and Kellner 1964). However, efficiency has not totally disappeared from the family and a certain degree of division of labor remains. Cooking, cleaning, tidying up, etc., but also raising children preserve asynchronicity within families.

Nevertheless, the solidarity principles of work and of family are potentially conflicting: economic efficiency requires workers to be desynchronized whereas family stability needs synchronicity. This temporal conflictuality used to be buffered while only one spouse was involved on the labor market, at the expense of a higher division of labor between spouses[2]. The situation changes radically for dual-earner couples: asynchronicity can reach its highest point and change radically the familial trade-off between mechanical and organic solidarity.

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 opposite modes of social integration. From this more general perspective, the positive consequences of the increase in female labor force participation on parental time suggest that the transition from single- to dual-earner couples, i.e. the decrease in families' organic solidarity, is indeed associated with an increase of 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 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 work day, then the family time. The second step consists in looking at how the family work day 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 work days, are presented

[2] 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.

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 year[3] 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 studies 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 typologies between 1986 and 1999, the analysis was performed on the two datasets merged: 50% of the time slots of the former have been dropped[4].

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 studies, 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 program.

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 work day into three indexes. The problem of this numerical approach is that it is subsequently difficult to have a meaningful overview of family work days. The best way to describe family work days 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 work day from 9 to 5 is very different from an 8-hour night shift. Lesnard (2004) 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 was introduced in the social sciences by Andrew Abbott (Abbott and Forest 1986, Abbott 1995). This family of methods can be seen as a way to generate a measure of dissimilarity between sequences that can further be submitted to more standard clustering algorithms to build taxonomies. 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

[3] With the exception of summer and Christmas holidays.

[4] 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.

substitution operations, insertion and deletions of events loosen the connection of processes with the temporal scale (here the day) and are to be avoided here given its importance to the analysis of the scheduling of work. Substitutions costs are 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. Consequently, since starting to work is quite usual at 9 am, it is impossible to say that these 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 reflected by collective rhythm (the sociological name of the transition matrices).

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 easier[5]. Every day with at least 10 minutes of paid work for both spouses has been considered for the analysis: rather than deciding arbitrarily from which minimum duration family days are 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 sizeable (see Table 2). Spouses' individual diaries are simplified and combined to describe and in the end the family work day can be described by a 4-state space process:

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 work days 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 algorithm[6].

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 different types of solidarity at work within contemporary families are to be seen. When reduced to primary activity, only the component of family time relative to efficiency 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.

[5] Note that the results are the same whether the two datasets are pooled or not and that it is just to make comparisons easier that only the pooled results are presented.

[6] The beta-flexible method has been used here. See Milligan (1980 and 1989) for a review of the advantages of this method. Note that choosing the Ward algorithm requires the additionnal assumption that the distance produced by the OM algorithm is euclidean.

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

Unfortunately, it is not possible to apply this definition for the last French 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 time[7]. For this reason, the analysis will focused mainly on 1985.

Results

The family work days

Eight types of family work days 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. If this sort of work day is considered as the reference, then other forms of family work days can be characterized as atypical.

[7] With the additionnal 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 is not oberved, 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 work days in 1985 and 1999

Atypical family work days deviate from this reference in four main ways. The family work day with long work hours is characterized by at least one work day whose duration is superior to 10 hours. The shifted family work day is composed of shifted individuals work days: 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 spouses is simultaneous[8] (synchronous) and consequently conjugal non-work time is highly synchronized. Consequently, 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 showned: this is precisely the aim of this article.

However, a lot of family work days deviate from this standard and the trend, poorly measured by two dates, is upward. Since atypical work days are characterized by less synchronicity, it means that desynchronization substantially increased between 1985 and 1999. Logically, when at least one spouse is working more than 10 hours, synchronicity is twelve points smaller. This situation of reduced sociability concerns 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 which can be almost nil for totally shifted couples (3% of the family work days). Most of the time, family work days 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 trade in these families for a more equal division of parental labor.

[8] 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").

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 shifts in these reduced schedules: in other words, part-time work is also quite often shifted work.

Type of family work day		Social position of the husband								Total
		Self-employed	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 work days

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

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 1999

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: couples who can decide they schedule overwhelmingly prefer synchronicity 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 that become desynchronization for couples who occupy intermediate and low social positions. Moreover, these flexibility requirements have increased

since 1985, leading to a dramatic increase of desynchronization for families of unskilled workers. This is why the title of this article suggests a causal link between the family work day and family time: work schedules are seldom chosen and therefore are constraining family time.

Family time

When there are no children, family time is reduced to conjugal time (Table 7). The main conjugal activity 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 spend almost three hours and a half daily with one another.

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 for couples with no child (hours and minutes per day)

Family time is radically different for couples with children (see Table 8). 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 the main parents-child activities. Conjugal time consequently shrinks drastically and TV becomes the most popular activity spouses spend time 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 8 - Family time in 1985 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 US 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 charge of most of those two kinds of unpaid work, they have to develop

polychronous capabilities (Hall 1983). Fathers' time alone with their children is limited to a few minutes here and there, but mostly concentred on TV and other leisure.

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 that are committed to maximize the time they put into raising children. The family time increase observed between 1985 and 1999 suggests that these aspects are becoming more and more important for families.

The consequences of the family work day on family time

Logically, the more the family work day 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: as we suggested above, when children are present, conjugal time is likely to occur on the evening in front of TV, when children have gone to bed. Consequently, desynchronization is harmful to couples when it occurs on 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. Of course if we had taken into account synchronized sleep, this would not be the case. Nevertheless, it is when men have a shifted work schedule on the evening that (awake) conjugal time is the lowest.

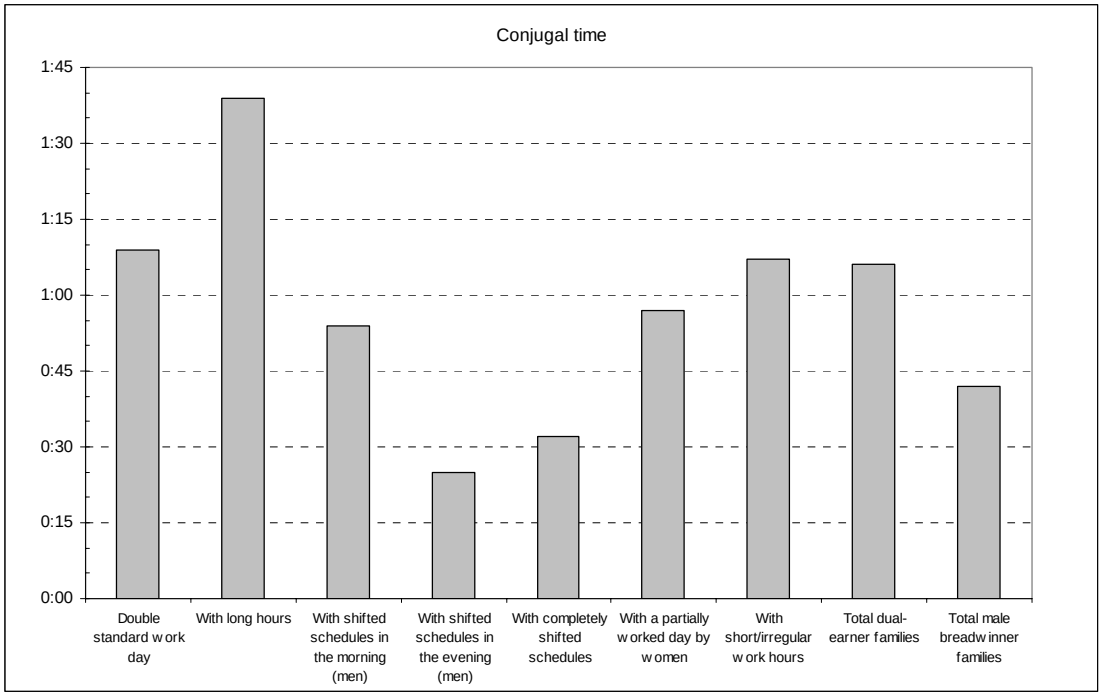

Figure 1 - The consequences of the family work day on conjugal time in 1985 for couples with children

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 suggest that overall, the generalization of dual-earner couples can be related to more symmetrical family 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 strategical 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 the kind of family work day which is 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 favourable for parents-child time (Figure 2): 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 on the evening, whether because they have a long work day or because their schedule is shifted on the evening, then parents-child time is lower. 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 synchronized[9].

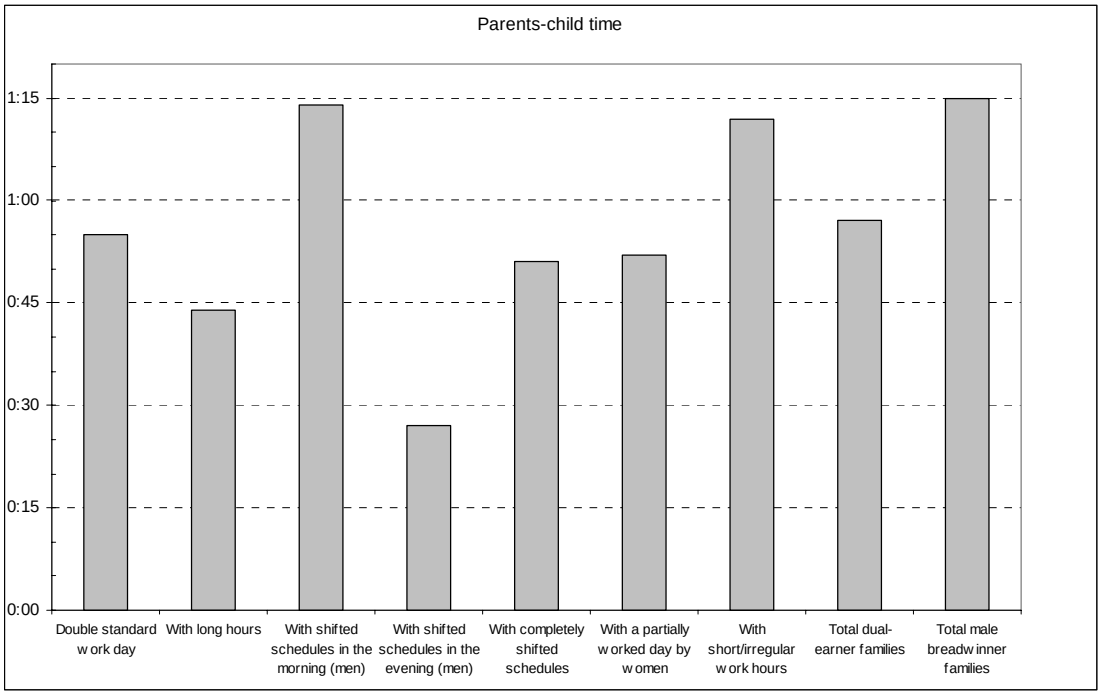

Figure 2 - The consequences of the family work day on parents-child time in 1985 for couples with children

But 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 work day 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 work day 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 the opening hours of schools, especially with their 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 leisure activities.

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

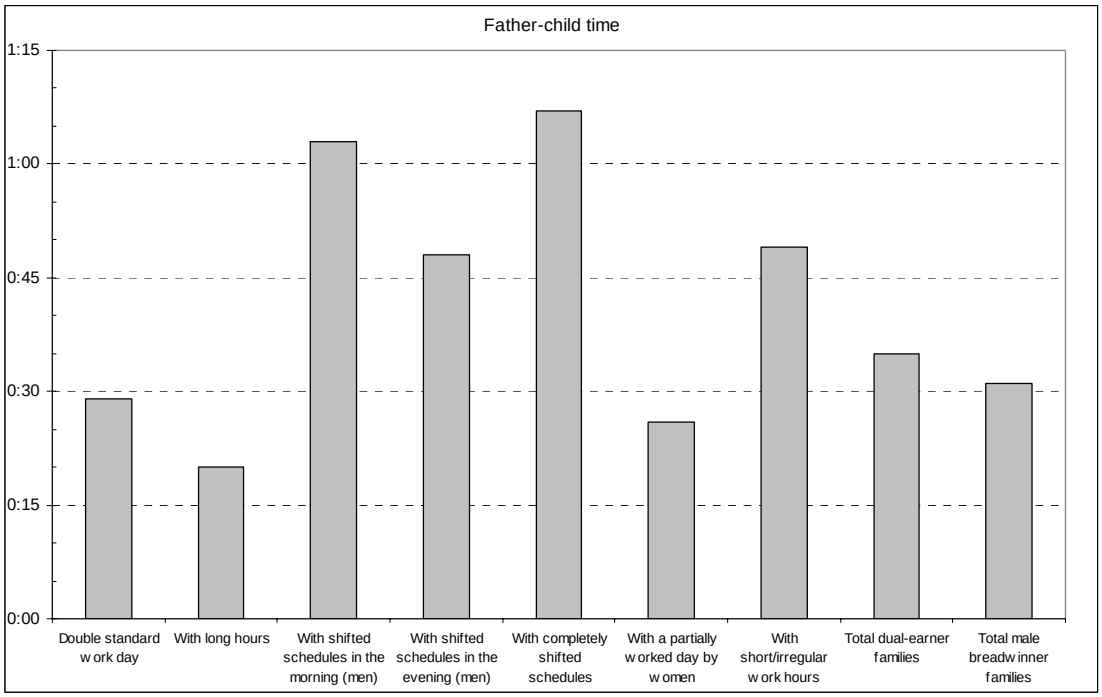

Figure 3 - The consequences of the family work day on father-child time in 1985 for couples with children

Mother-child time is less sensitive to the type of family work day. 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.

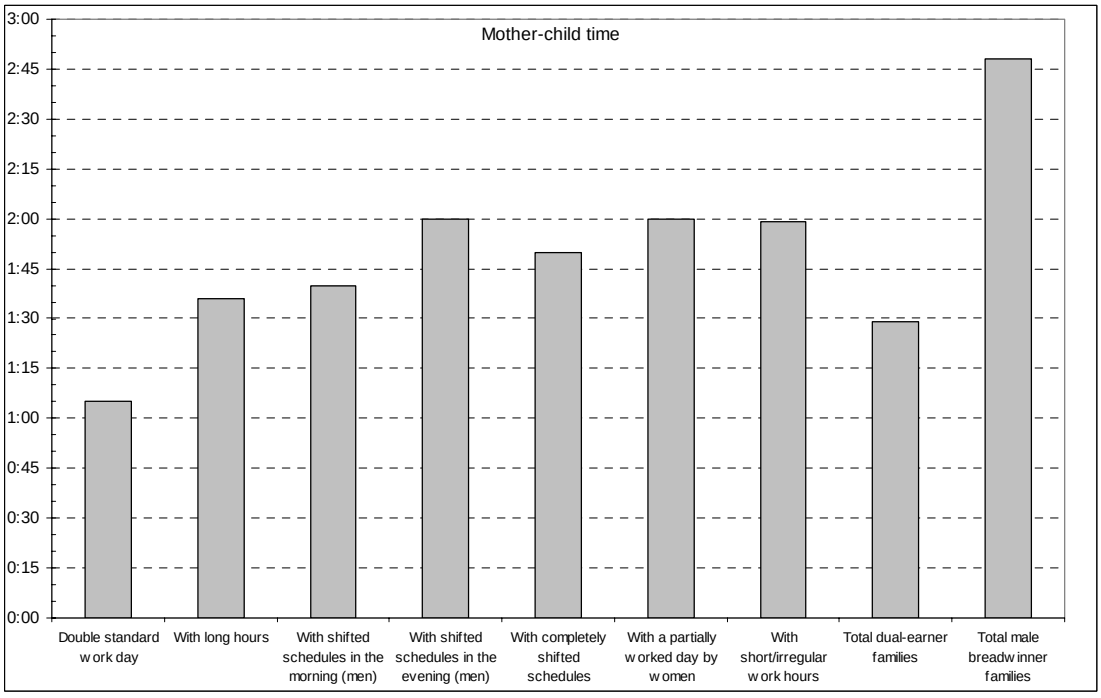

Figure 4 - The consequences of the family work day on mother-child time in 1985 for couples with children

Figure 5 show 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 (especially in relative terms) when both spouses are participating to the labor market.

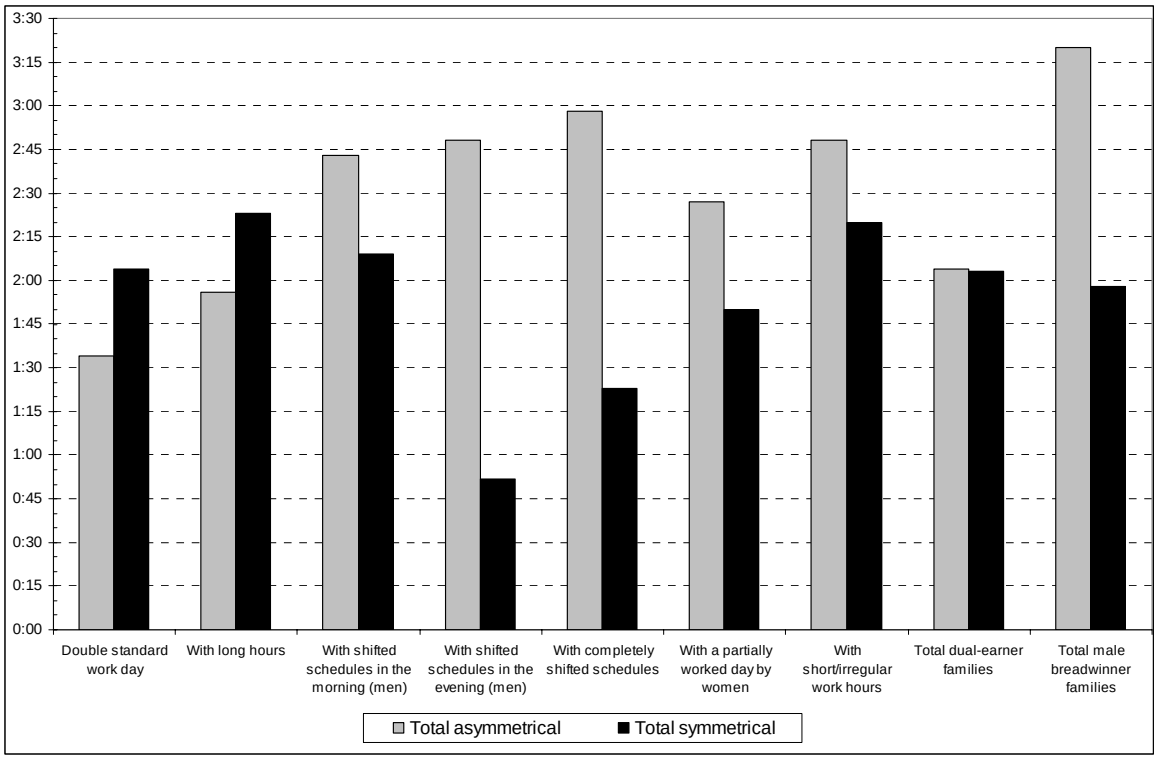

Figure 5 - The consequences of the family work day on asymmetrical (father- and mother-child time) and symmetrical (conjugal and parents-child time) family time in 1985 for couples with children

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. Note that the symmetrical family time associated with the family work days with shifted schedules on 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 4 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. 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 extremely close to that of male breadwinner families.

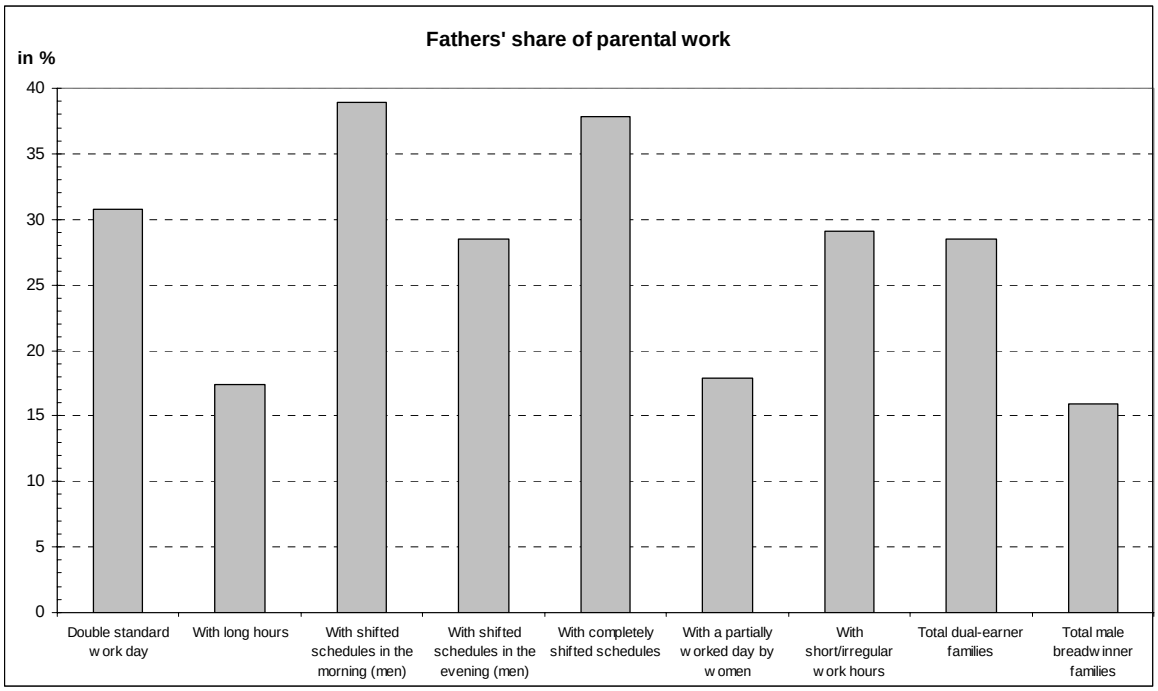

Figure 6 – Fathers' share of parental work in 1985 for couples with children

Discussion

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, mechanic solidarity is more developed 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. Division of parental labor has of course not disappeared, but has lessened: father spend relatively more time with their children than in male breadwinner families. But as to desynchronized couples, symmetrical family time is less developed while organic solidarity still seems to be strong: in fact if those couples are spending less time in symmetrical family activities, they also share more equally parental work.

If we remember that desynchronization is highly correlated to social position and indirectly imposed by firms, then we see the way work and family are balanced daily depends to a large extent on social position. Couples of executives who can decide their schedules have more conjugal and parents-child time than couples of factory workers. Even if taking shift can be a choice, it is not true on average: couples must cope with shifted schedules and seldom choose them. Nonetheless, if this kind of work arrangement is detrimental to symmetrical family time, it can foster a more egalitarian division of parental labor. When fathers are at home alone when their children come back from school, they are in a way forced to spend time with them.

Consequently, it is the triple synchronization of schedules of fathers, mothers and children that matters: when fathers 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 weekends: in this case, each hour of work is almost completely at the expense of family.

These results can have implications for policy. The UK has for instance passed a law in 2003 which force employers to pay attention to employees' request for more family friendly work schedules. However, the law does not force employers to agree these requests. These results have also potential consequences on gender and the way it is produced daily within families: by forcing men to spend time with their children, desynchronization may affect long term gender dispositions.

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