The circulation of unpaid domestic work: for one's own household, done as help or received as help - an analysis by age and income

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Unpaid domestic work goes mostly unrecorded by standard economic measurement tools such as National Accounts, because it is the object of no monetary transaction. Yet it is a major source of the services consumed by households. The amount of time households devote to it is, in itself, impressive: unpaid domestic work absorbs between once and twice as much labor time as paid work, in France, in a given year (section 1).

Understanding the economy of unpaid domestic work is therefore relevant to the analysis of the provision of services to households in general. Paid services can come as a substitute to unpaid domestic work, or act as a complement. Moreover, not taking into account the services provided by this unpaid work may lead to underestimating the consumption of household, or to have a distorted view of its distribution in the population (across income levels or age groups for instance).

Using data from the latest French Time Use Survey (section 1), this paper studies unpaid domestic work first from a life-cycle perspective, then from a standards of living perspective.

First (section 2) there are moments of the life cycle when households consume a lot of services, both self-produced and received from other households as help (mainly when young children are present); other moments when they produce more domestic work as help, around the age of retirement; and later in life, as ageing takes its toll, they become net consumers of both paid and unpaid domestic services.

Second, from a standards of living point of view (section 3), core domestic work time is decreasing in equivalized income, since the better-off purchase more market substitutes for household chores. It is not so much the case when tasks bordering on leisure such as gardening or construction and repairs are included. But once the value of domestic work is equivalized to account for household size, its contribution to the welfare of households appears roughly constant across the income distribution. This is because household size in decreasing in income, and it raises the issue of the equivalence scale we should use to account for economies of scale in home production.

But lastly, this picture of a uniform distribution of unpaid domestic work across the distribution of standards of living must me qualified, when looking at which activities vary and which don't (section 3.2.). The gender gap as regards domestic work time, in particular, looks very different at the top and at the bottom of the income distribution (section 3.3.).

1. Data, definition issues and contextual figures

1.1. Data

The data I use is the latest French Time Use Survey, whose fieldwork took place between September 2009 and December 2010 (data is collected over a year to account for the seasonal character of time use). It is representative of the non-institutional population of mainland France and 3 overseas "départements". One individual was selected in each household among its members aged 11 and above, and their spouse or partner, if there was one, was also interviewed. Respondents were given two diaries to fill in, one for a weekday and one for a weekend day. All in all, the sample consists of 12 000 households, 18 500 interviewed individuals, 27 900 diaries. The activity list comprises roughly

one hundred basic activities, in compliance with Eurostat's *Guidelines on Harmonised Time Use Survey* (Eurostat, 2010).

The sum of the weights of the respondents with a diary is 54.4 millions, when the total population of France was 64.6 on Jan 1st, 2010. The difference is made up inhabitants of French Guyana, children under 11, residents of institutions such as care homes, boarding schools, prisons, and students on campuses. It can be assumed, however, that these populations do little domestic work, by definition: their parents or the institutions they live in, respectively, take care of housing, food, laundry, etc.

1.2. What do we call domestic work?

Defining domestic work may seem obvious, as it immediately evokes such chores as cleaning, cooking, and ironing, but exactly where it stops is not easy to delineate.

The "third party criterion" is usually the cornerstone of the definition of domestic production: "If an activity is of such character that it might be delegated to a paid worker, then that activity shall be deemed productive" (Reid, 1934, p.11, cited by Ironmonger (2000)). Being too inclusive, this criterion has been completed with the reference to social norms: "the third party criterion comes up against borderline cases which must be resolved by reference to normal social practice and standards" (Chadeau, 1992).

Three criteria are therefore usually used: it must be unpaid, productive, and could be delegated to someone else. However, there may remain ambiguous cases and these criteria should be seen as general guidelines more than golden rules. For example, sexual intercourse is identified as an important activity for well being (Stiglitz et al., 2009), but it is chastely eluded in the National Accounting literature on household production. However, it meets both criteria suggested by Reid and Chadeau. It can be delegated to a third party outside the household, and prostitution also exists (legally or not) in most countries. However it is a little extreme to argue that unpaid sexual intercourse within the household should be deemed productive.

This may be a far-fetched example, but it illustrates the point that some productive and delegable activities border on leisure (gardening, construction and repairs, etc.) and more generally, the question arises as to what can or cannot be delegated, in a given social context. This means that there is a "halo" of domestic work, just as one can speak of the "halo" of unemployment. Yet there is currently no international standard providing guidelines for the interpretation of the above criteria, comparable to the definition provided by the International Labour Organization for unemployment. Three definitions of domestic work are therefore considered here, according to a more or less restrictive interpretation of the criteria. This allows computing an initial estimate and, at the same time, reflects the sensitivity of the measurement of domestic work to the choice of a definition.

- The « core » perimeter consists of only those activities that every study agrees to be productive, domestic work, in contemporary industrialized countries: chores such as cleaning, doing the laundry, the dishes, etc.; cooking; material care to and driving children and disabled persons ; household management… All these routine tasks can be delegated and many households use market substitutes for them.

- The « median » perimeter adds to the first list a number of activities that belong to the "grey zone", either because they border on leisure (gardening, construction and repairs, fishing and hunting, picking berries…) and are probably made to last longer than necessary, or because their utility lies in the process of doing them, itself, and their delegability can be questioned (gardening or decorating the house, playing with children). Shopping is also classified here because in the French TUS data, we cannot distinguish everyday grocery shopping, a productive chore, from "window shopping" or shopping for pleasure.

- The « extensive » perimeter furthermore contains traveling by car for oneself, and walking the dog.

The next paragraph discusses the details of the activities included or not in each perimeter, and the issues they raise.

1.3. Conceptual issues raised by the "grey zones", in detail

Four main types of activities that make up the differences between the three perimeters require further discussion: personal care, transportation, productive leisure and childcare.

- **Personal care**

Men used to go to the barber to get shaved, but no longer do. So, is shaving oneself productive? The textbook example is that of the nobleman of the 18th century who had servants dress him, comb his hair, read books to him, etc. This would seem anecdotal except that today, more and more dependent elderly people receive paid help to wash, dress, eat, etc. So, washing can be delegated in some cases, and there exists a market substitute for it. Washing one's handicapped spouse is then productive work, but washing them if they have no disability isn't (and neither is washing oneself), which might seem paradoxical since the exact same task is performed, the same service rendered.

In this line of thought, Alesina and Ichino (2009), using the MTUS (Multinational Time Use Survey) database, include the "AV13: dress/personal care" category in their definition of unpaid domestic work. Doing this with our French data would add almost an hour to the average daily estimate of unpaid work. This would mean a dramatic increase: +50% over the core definition of domestic work, +33% over the intermediate one which currently totals 3 hours a day, +25% with the most extensive definition (currently 4 daily hours).

The issue is the same with medical care: if a person does their own injections, massages or bandages (as people with chronic diseases often do), should it be counted as production since these acts are usually delegated to nurses and physiotherapists? In theory, the answer should be positive, but I choose not to include medical care done to oneself, mainly for measurement reasons: in the data, it is impossible to distinguish serious medical care (injections, strapping...) from everyday benign care (putting a band-aid on your child's finger). The latter is not delegable (you don't call the doctor for that) but constitutes most of the time households spend on medical care.

- **Travel time**

There is no consensus in the literature on how travel time should be treated (see for example (Eustat, 2004)). Some studies include travel time into the time devoted to the activity to which the travel is leading, for example travel to the store is incorporated into shopping time, travel to work into paid working time, etc., but this is not entirely satisfactory, since at least part of the travel time could be delegated. Clearly, driving someone else, a child or a relative for example, can be delegated and is productive. But what does it mean to delegate self-transportation? If I drive to work, I could delegate the driving to a chauffeur or use public transportation, and use that time to do something else: write work-related emails, read a book, etc. But the time that becomes available cannot be used totally freely, since I would still need to be in a car or a bus. If I have to go somewhere, my travelling can only be partially delegated. And I can pay someone to drive me to work, but what if I'm walking to work? Here, the means of transportation enters into play: only driving can be delegated, and only partially so. The 2010 TUS data for France includes information on the means of transportation / location for every 10-minute interval. I use this information to include only travelling by car (travelling to work or other travelling) into unpaid work, and only in the most extensive definition of domestic work. Accompanying a child and travelling for another household (mostly driving other people) are included in core productive activities, since they are entirely delegable to any trustworthy driver.

- **Gardening, home repairs, fishing and hunting: the frontier with leisure**

There is another grey zone where domestic work and leisure overlap. If the person mainly derives utility not from the output of the activity (the good or service produced), but from performing the activity, from the process itself, then it can no longer be delegated without losing all its value. Amateur pianists do not play the piano in order to be able to hear some (probably poorly performed) music, but for the sake of playing. So, it is generally agreed that unpaid artistic endeavours (music, painting, photography, making films) should not be counted as productive. The case of what is, precisely, often called “productive leisure” is less clear-cut. It includes gardening; home or vehicle repairs; sewing and knitting; fishing; hunting; picking plants, berries or mushrooms. Producing vegetables, fishing and repairing the car are most often delegated in our society, so one might think that people who engage in these activities do so because they enjoy it. But then, from a National Accounting perspective (as opposed to a welfare economics perspective), the question of whether one is enjoying the activity is not necessarily relevant. Indeed, to measure market production, enjoyment is not taken into consideration to measure the value of paid work: the same wage is counted, whether one enjoys the job or not.

Most of the literature thus includes gardening, home repairs, knitting and sewing in domestic work, because these are productive, delegable activities. Actually, the current SNA definition of production, used to measure GDP, includes the goods produced by households for themselves, thus recognizing the productive potential of households.

Productive leisure is a case in point regarding the issue of productivity that one necessarily encounters when measuring production through inputs (as opposed to outputs). Since gardening, home repairs or fishing are often done for pleasure, we can suspect that people take their time to do it, and productivity is lower than if it were done for pay. On this basis, together with the fact that they are probably done for themselves (as hobbies) as much as for their output, I do not include gardening and DIY in the core definition of domestic work, but only in the intermediate and extensive ones. On the contrary, unpleasant activities such as vacuuming or doing the laundry are less suspect of such bias, and their productivity is probably closer to that of their market equivalent.

The same goes with walking the dog: it can be delegated and "dog-sitters" are beginning to appear in France but most often, when reading the TUS diaries, one feels that walking the dog and taking a pleasure walk are one and the same activity, and it generally takes much longer than the necessary time for the dog to be walked. This is why I have included walking the dog only in the most extensive definition of domestic work, whereas material care of pets is included in the median definition and care of productive animals in the core definition.

- **Is all time spent with children productive?**

Childcare is the last major issue that needs tackling if one is to agree on a definition of unpaid domestic work. First, social norms as to what can be delegated are variable over time and place. Breastfeeding is no longer physiologically delegated to another woman in industrialized countries, but feeding a newborn can be delegated thanks to bottle feeding. Some authors (mostly feminists) have therefore argued that breastfeeding is productive, while others who oppose bottle feeding argue that it is not, because it cannot be delegated. At the other end of the spectrum, can playing with one’s child or having a conversation with one’s child be delegated without losing its (emotional) value?

Within the Eurostat Task Force (Eurostat, 2003), no consensus could be reached on the question of what constitutes productive childcare. In Time Use data, it is possible to consider as childcare (in descending intensity of care):
• only time spent with an explicit activity of material childcare as primary activity

• time spent engaging into various activities for or involving children, but less material and more leisure-like: games, conversations... as primary activity
• time spent on these two types of activities, either as primary or secondary activity
• all time spent in the presence of a child, even if it is not involved in the activities described in the diary. Even sleeping when a child is present could potentially be counted as childcare, since an adult needs to be there and the task of "being there" could be delegated to a babysitter.

As an illustration, one can compute this latest, extreme figure: the amount of time adult respondents spend alone with a child or several children (so we can assume that the respondent is in charge of supervising the children). It amounts to 46mn a day on average, 138mn for a mother living in a couple, 57mn for a father living in a couple, and 272mn for a single mother. This is twice the time spent with childcare as a primary activity (23mn on average), and the figure would be even larger if time spent with both children and other adults was included. This shows that, with the French TUS data at least, deciding whether or not to count the time spent with children in passive childcare as productive would have a major impact on the measurement of domestic work. This impact is much stronger than that of secondary activities.

In what follows, I choose to include only active childcare done as a primary activity, and I distinguish between core childcare (material care and supervision), which I include in the core definition, and leisurely childcare (playing, discussion with the child) which I include in the intermediate and extensive definitions only.

1.4. Unpaid domestic work represents at least 42 billion hours, 15% of GDP

With these definitions, the total number of hours of “domestic work” in France in 2010 can be computed, and valuated in one wishes to compare – under a certain number of hypotheses – domestic production to market production. This was done in (Roy, 2012), and hypotheses are further discussed in (Poissonnier and Roy, 2013), so these figures are only given here as contextual data, to enlighten the quantitative importance of domestic work in the economy.

Taken in its most restrictive (“core”) definition, unpaid domestic work in France represents 42 billion hours a year, that is, 110% of the time spent on paid work in the French economy over the same period of time (38 billion hours). With the broadest definition, it amounts to 77 billion hours, twice as much as paid work time.

Using the core definition and the net minimum wage, its value is estimated at 292 billion euros in 2010, i.e. 15% of GDP. By way of comparison, this is slightly higher than the contribution to GDP of all manufacturing done in France (13%). Using the intermediate definition and the gross minimum wage, a middle-of-the-road approach in all respects, domestic work is worth one third of GDP. Finally, using the broadest definition (which is still in the realm of generally accepted international standards) and the "specialized substitutes" gross wages brings the value of domestic work to 71% of GDP. These figures are in line with estimates that were computed on other OECD countries during the 1990s and 2000s (see Poissonnier & Roy, 2013, Chadeau, 1985 and Eurostat, 2005 for more on this topic).

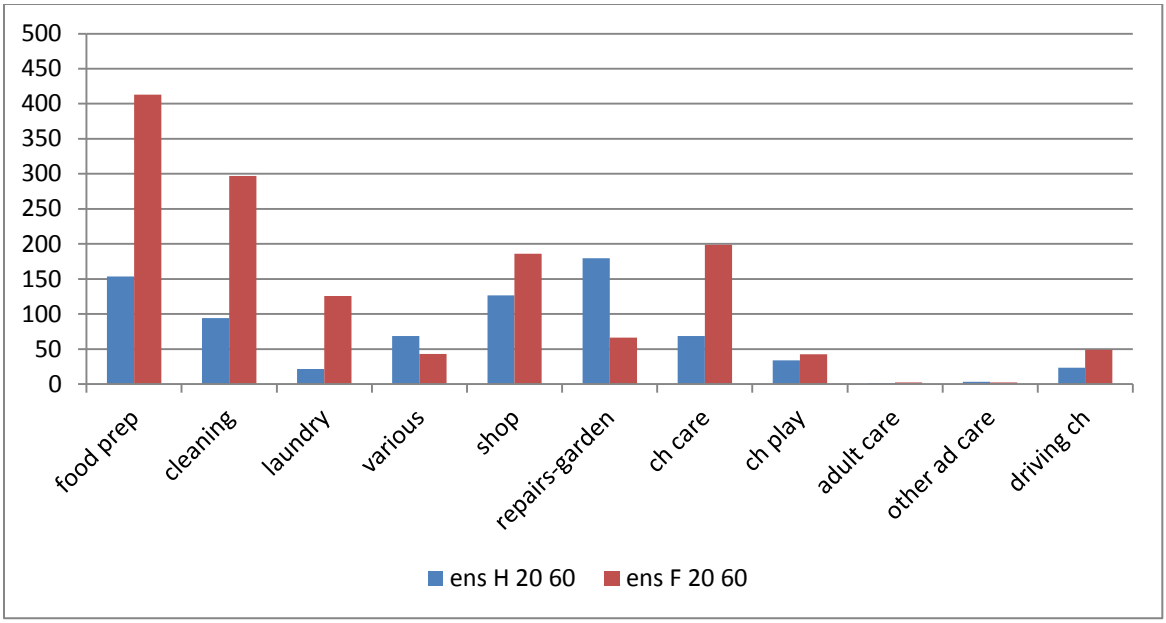
1.5. Cooking and cleaning are the most time-consuming domestic activities

On a more micro-economic level, a first glance at the number of hours spent yearly by men and women aged 20 to 60 on the main domestic activities shows that the food-related tasks (cooking, setting the table and serving meals, dishwashing) are the most prominent ones. Women spend 400 hours a year on them and men, 150 hours. House cleaning comes next (300 and 100 hours

respectively), followed by doing the laundry and ironing, together with shopping and childcare (for women), or shopping and gardening/house repairs (for men). Focusing on households where a child is present gives exactly the same picture, with of course childcare taking up much more time (350 hours for women, 140 for men).

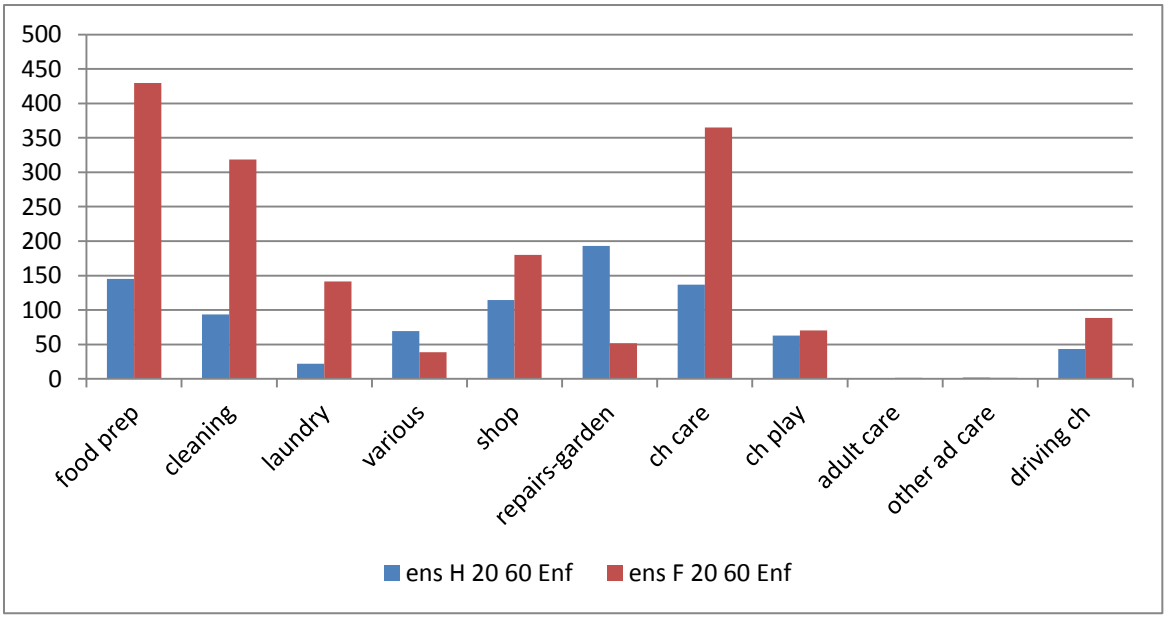
Gender inequality in domestic work time is of course blatant, but since it is extensively documented in the literature, I will not dwell on them, except inasmuch as it intersects with income inequality (see part 3).

Graph 1: yearly domestic work time on various activities by men (blue) and women (red) aged 20 to 60



Source: 2010 French Time Use Survey

Graph 2: yearly domestic work time on various activities by men (blue) and women (red) aged 20 to 60, with at least one child under 18 in the household

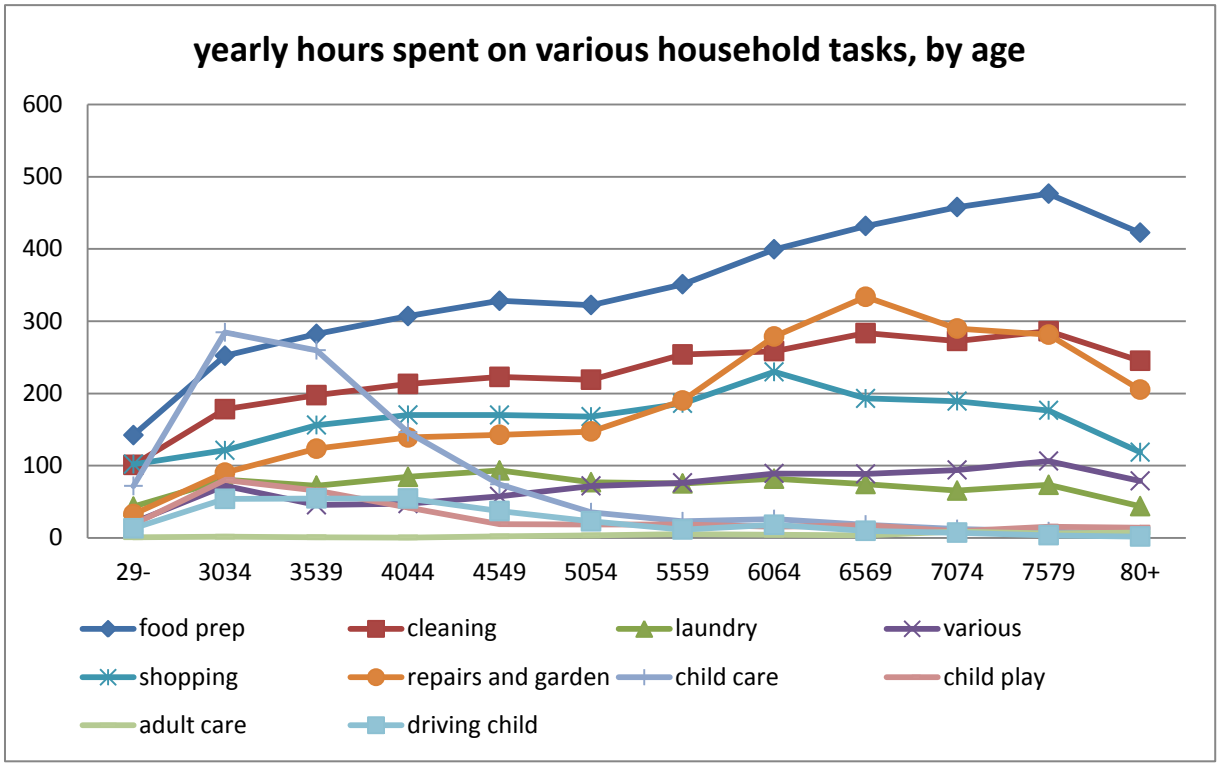


Source: 2010 French Time Use Survey

2. The circulation of domestic work along the life cycle

2.1. The household as producer: for one's own household and as help to others

Graph 3. Time spent (per person) on various domestic tasks for one's own household, by age



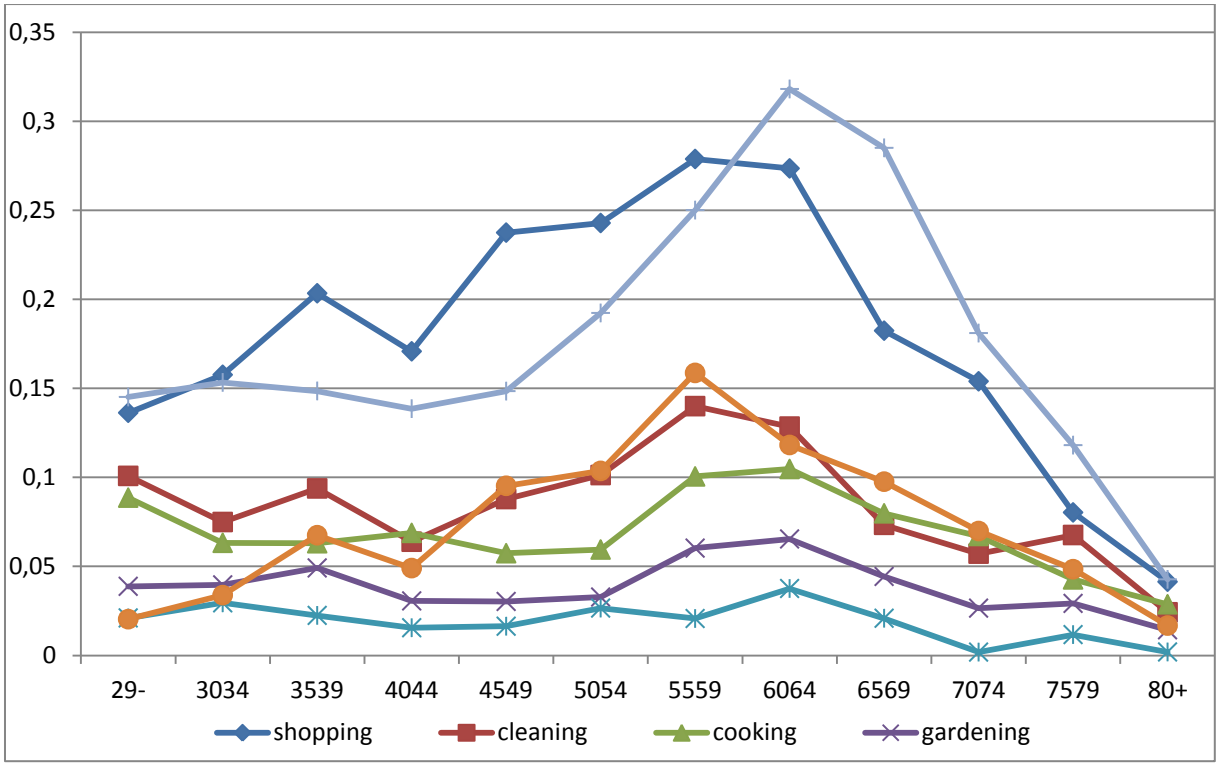
There are two striking features in graph 3, representing time spent producing services for one's own household. First, the bump in child care between 30 and 40 is not accompanied by a similar bump in other tasks, as if there were important economies of scale in other activities (such as housecleaning, doing the laundry etc.). As regards the amount of time spent on these activities, the addition of another family member does not really make a difference. "Material" child care (feeding, washing, clothing and looking after the child) becomes the most time-consuming domestic activity, on average, between 30 and 34.

Second, time use patterns change between 55 and 65, when retirement leaves former paid work time to be reallocated to other activities. There's a rise in time spent on domestic tasks for one's own household. The sharpest increase is in home repairs and gardening, which corresponds to the classical image or retirement. Time spent on food preparation, setting the table, dishwashing etc. increases continuously until 80, but one might wonder if that is the sign of increasing meals quality or decreasing productivity.

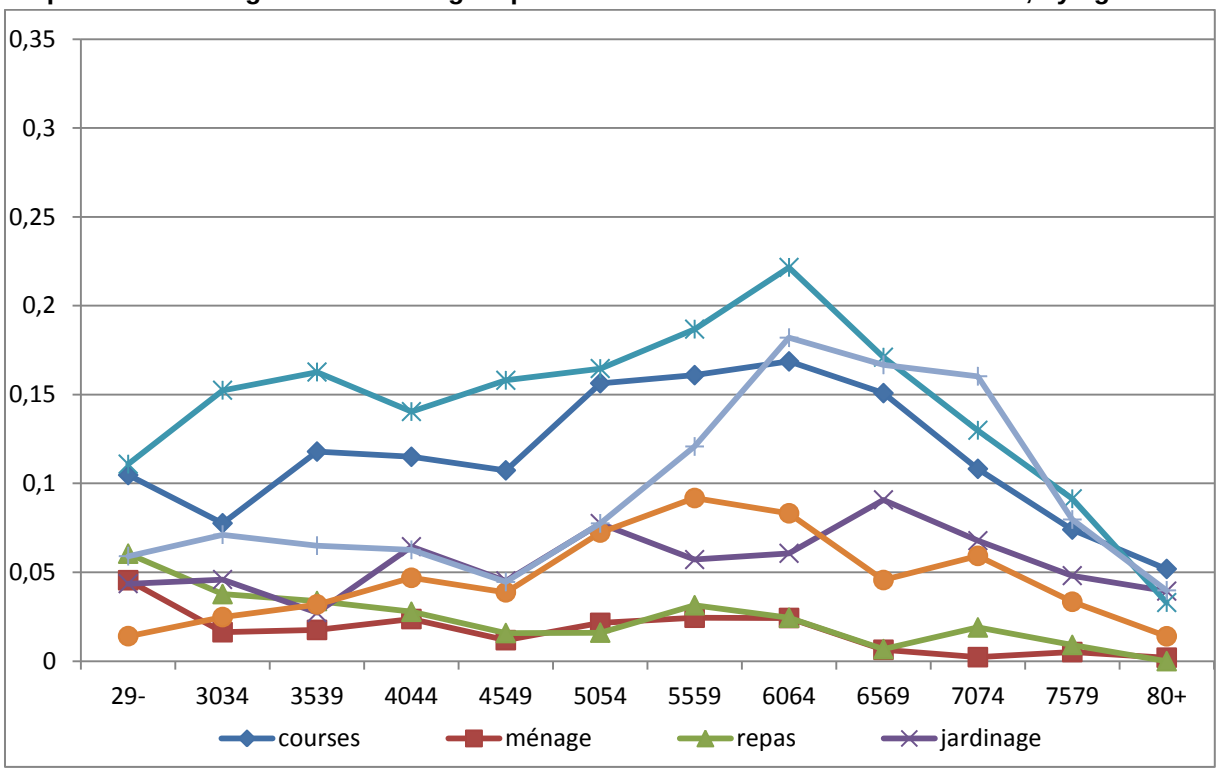
The same tasks performed as help to another household, follows a very different pattern (graphs 5 and 6). Here, it's not hours that are measured but the percentage of people (at the individual level) answering "yes" to the question "over the past 4 weeks, did you help someone outside of your household to… (the list of tasks follows)?". The age profile of answers to that question shows a clear peak between 50 and 70, especially for women, and especially for child care, shopping, adult (mainly elderly) care and house repairs (for men).

The age at which these activities for other households peak is clearly linked to demographic factors: retirement coincides with the age at which currently retiring generations begin to be grandparents. One can wonder if it will be the case in the future, with retirement occurring later and younger generations having children later.

Graph 4a. Percentage of women having helped another household for various tasks, by age



Graph 4b. Percentage of men having helped another household for various tasks, by age



But is this unpaid production of services for oneself and for others a substitute or a complement to market production ? For instance, as regards retirement, one might wonder if at that point, households are “re-internalizing” tasks that they had formerly externalized. Do they eat home more often instead of going to restaurants or having lunch at work, do they fire the cleaning lady now that the children are gone and they have time to clean, do they stop using the dry cleaning services now that they have time to iron?

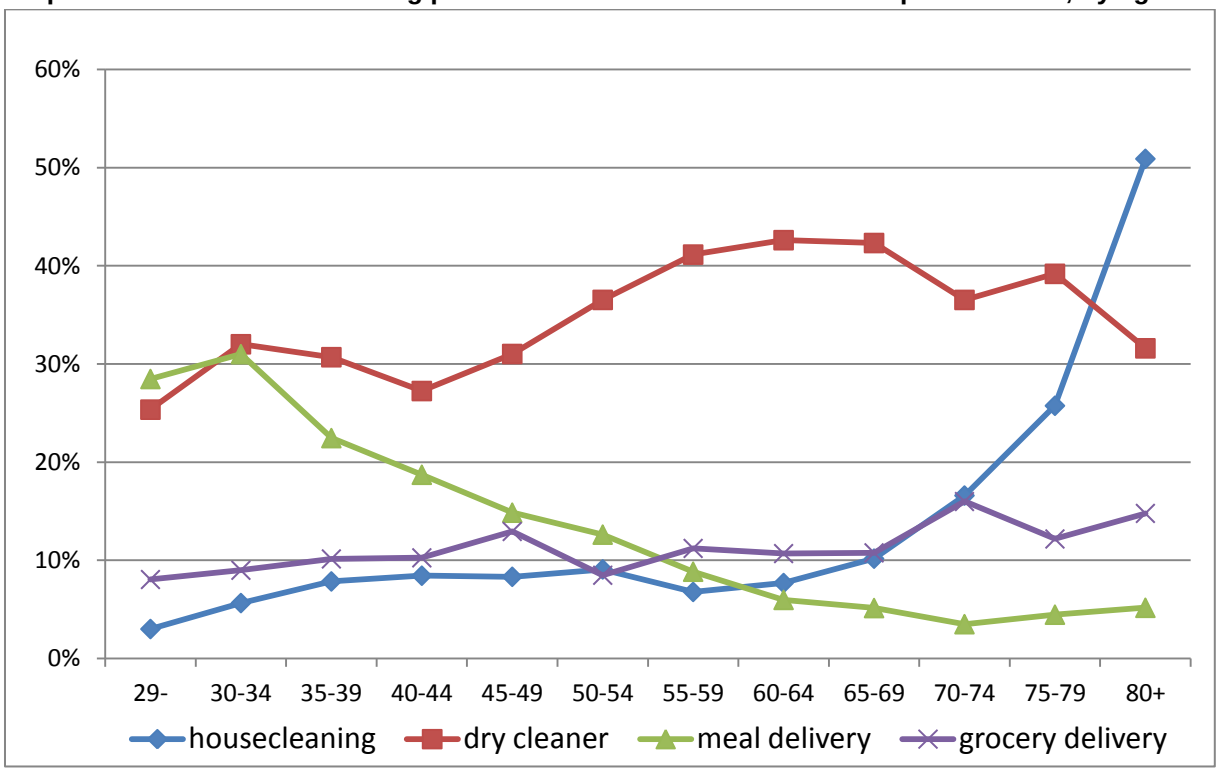
2.2. The household as consumer of market services across the life cycle

This hypothesis can be examined with the question in the same survey asking whether the household used a series of services during the last month (graph 5), and with a question (at the household level) on help received, symmetrical to that on help provided to other households.

Time Use Surveys are probably not the best source to observe the use of paid household services, but we see a slight decrease in the percentage of households using cleaning services, between 55 and 65. The striking feature however is rather the huge increase after 70, when elderly people become more disabled and social services provide house cleaning as help. Childcare is the object of a specific section of the questionnaire, which yields more complex figures that can’t be compared to those presented here. I am therefore not presenting anything on the use of paid childcare, which is better documented elsewhere, and occurs at the same period of time: 30 to 40.

The point of this graph isn’t really to give figures on the proportion of households using these services. It is, first, to stress the fact that the use of paid services, the self-production of services through domestic work and the help received from other households interact and must be studied together. And, second, to show that, just as different domestic activities for oneself exhibit different patterns of time use across life, so does the use of market services catering to different needs.

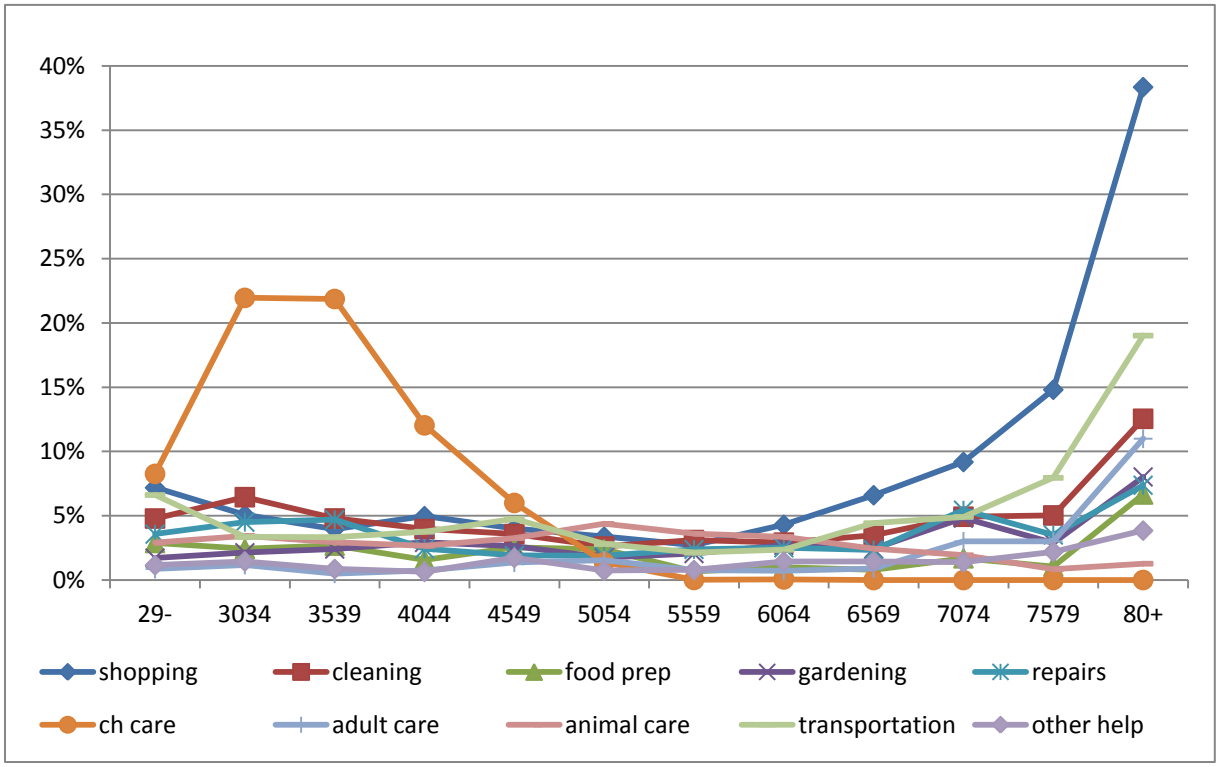
Graph 5. % of households having purchased various services over the past 4 weeks, by age



Source : 2010 Time Use Survey

If domestic tasks are not delegated to paid workers, one might wonder if more unpaid help is received at those moments in life when there is more need for child care (30 to 40) and at older ages, when cleaning and driving to the sore become difficult. Indeed , the questions on help received show a peak in help received between 30 and 40, only for childcare, mirroring the peak in childcare only for one's household at the same ages. For other tasks, help received soars after 80 only, with the exception of shopping, which increases earlier.

Graph 6. % of households having received unpaid help for various tasks over the past 4 weeks, by age



The analysis by age shows that childcare follows a very specific pattern, and as raising a child takes an enormous amount of time, childcare time is provided by the household members themselves, but also received as help (from retired grandparents in particular), in addition to being purchased or provided by government and local authorities.

Outside of childcare, other households services are produced as help by the recently retired, who probably provide more help than they receive. But the direction of the flow of services shifts somewhere between 70 and 80 when households become net receivers of domestic time as help.

3. Domestic work by income level

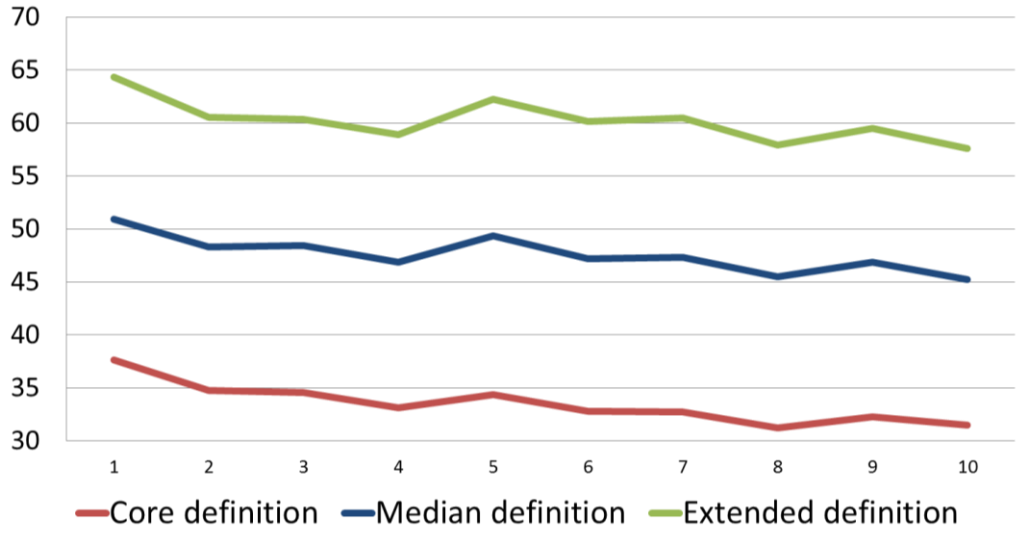
3.1. Domestic work time is decreasing in income, but households are smaller, making additional equivalized income constant across deciles

Following the literature on "extended income" (Frazis and Stewart, 2009), I try to assess whether taking domestic production (and the extra consumption it allows) into account mitigates the picture given by ordinary measures of inequality, which are based on monetary income alone. A technical

difficulty arises with the 2010 French TUS data: only one or two individuals are sampled within each household. In 1998, all household members were asked to fill a diary, and total domestic work could easily be computed by adding their reported work hours. This is no longer the case. Several imputation methods were tested. They differ in the functional form of the imputation function, in the inclusion or not of several explanatory variables, and in the econometric model used to compute imputation coefficients (OLS or Tobit). They all give the same qualitative results, which were also the results from a previous analysis using the more complete data from 1998 (Roy, 2011), so the results presented here seem robust.

The average amount of time devoted by a household to home production for itself is slightly decreasing in standards of living (=equivalized income) (graph 7), and all more so if one considers a narrower definition of domestic work (the better off tend to purchase more of these services on the market).

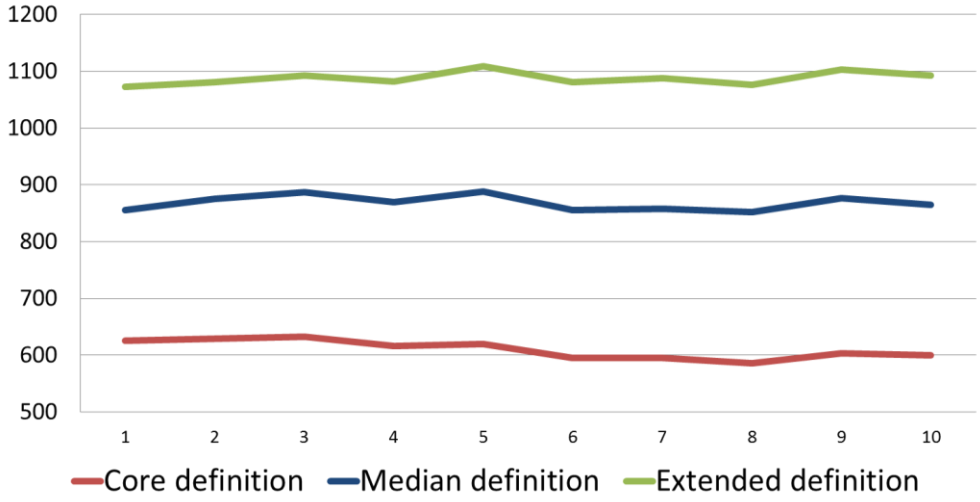
Graph 7. Time devoted by all household members together to domestic work, by decile of equivalized monetary income



The next step is to put a monetary value on these hours of domestic work, in order to be able to add it to monetary income. There is a vast literature on the subject of valuation, but it is not really relevant to the discussion here, because I am not interested in the absolute value of domestic work but in the differential increases in consumption that it brings at the top and at the bottom of the monetary income distribution. To illustrate this point, I choose to value hours at the net minimum wage, but another valuation would yield the same results, qualitatively.

Once the value of domestic work is equivalized to account for household size, its contribution to the "income" of households appears constant across the income distribution (see graph 8). This is because average household size is decreasing in income, and it raises the issue of the relevance of the equivalence scale that should be used for the unpaid production of household services (echoing the wider debate on equivalence scales used for monetary income, see Accardo (2007) for example).

Graph 8. Value of monthly home production (hours of work valued at the minimum hourly wage), by consumption unit, across living standards deciles



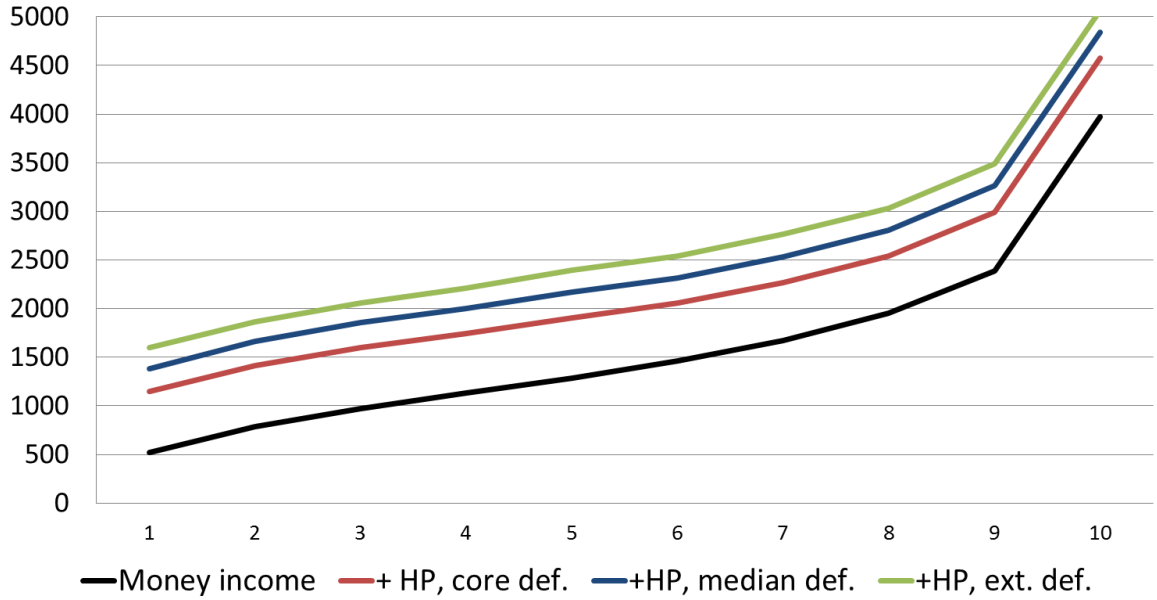
Going from the total value of a household domestic work to its equivalized value by using a standard equivalence scale (1 unit for the first adult, 0,5 for the following adults, 0,3 for children under 14) means making two assumptions:

1) All domestic work done by all the members of the household is pooled and benefits all of them, uniformly. One could wonder whether it is the case.

2) Dividing the total value by a number of consumption units allows comparing different households, making the value "equivalent" in terms of well-being for each member. Doing this assumes that the equivalence scale used for monetary income is adequate for home production, i.e. that the economies of scale are the same. But there is no reason why this should be the case. The debate on equivalence scales for monetary income is still an open one (see for instance Accardo, 2007), and the question of the extent of the economies of scale in the sector of unpaid domestic services by households for own consumption needs to be opened if one is to make relevant analyses of "full income" and of well-being. There is no obvious answer to this question: cooking for 5 instead of 3 doesn't require much more time, but ironing twice as many shirts or vacuuming twice as much surface takes roughly twice the time, and the issue of economies of scale in childcare is a tricky one, as any parents know. There is scope for further empirical research on this subject.

Nevertheless, the global picture is that home production is not much higher among households with a lower monetary income, so it does not allow them to "catch up" in terms of "full income" (see graph 9 below). But of course, measured inequality will mathematically decrease by adding a large constant to the monetary income of all households, so this will reduce measured inequality. These results are perfectly in line with those of Frazis and Stewart (2009).

Graph 9. Monetary and "extended" income (including the value of home production ('HP'), by consumption unit, across living standards deciles



Yet this is only an analysis on *total* unpaid work time and, as section 2 showed, different activities follow different patterns, with childcare standing out as both very time-consuming and concentrated in a specific period of a lifetime; house repairs as a specifically male task; and cooking and cleaning as both the most recurring and time-consuming housework activities. Besides, since some activities are clearly more enjoyable or socially valued than others (childcare, house repairs), and some border on leisure (gardening), one might wonder if the apparent stability of domestic work time across the income distribution hides a composition effect, in the types of activities performed.

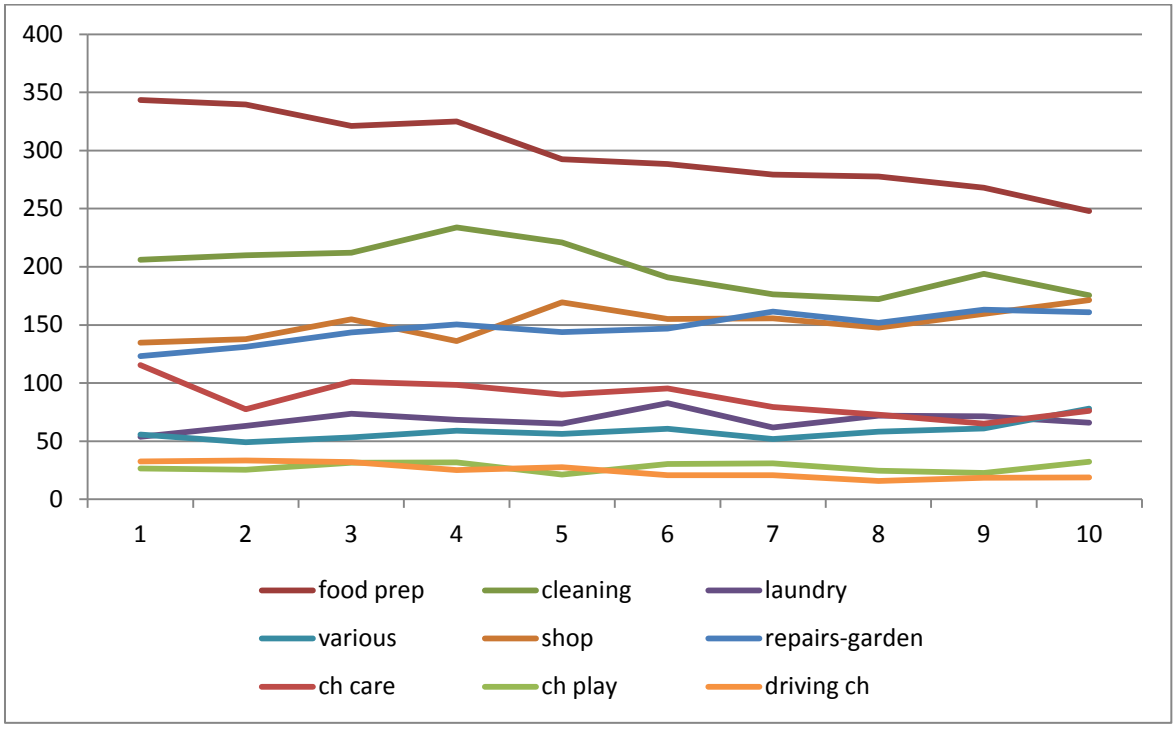
3.2. Individuals in better-off households spend less time cooking and cleaning

Looking at the same data as in section 2, across the distribution of living standards instead of across ages, shows that not all types of domestic tasks are equally distributed across the income distribution (graph 10).

Some of the activities have a relatively flat profile: laundry and ironing, various home arrangements. More leisure-like activities are slightly increasing in income: gardening and house repairs, shopping, But the striking feature is that cooking and cleaning the house are clearly decreasing in income. Material childcare (feeding, washing, clothing and watching over them) and driving the child around also take less time for individuals in the upper part of the distribution (7th decile and higher), whereas playing with the child, reading to him/her, etc (labeled "child play" on the graph) appears roughly constant at first sight.

It therefore seems that the small downward slope in total domestic work time across living standards is indeed the result of a substitution: a lot less house chores such as cooking, washing the dishes, and cleaning the house, a little more gardening and shopping, and the same amount of time playing with the children. Yet this general result looks very different if we look at men and women separately.

Graph 10. Yearly hours devoted to various tasks by individuals 20 to 60 years old, by living standards decile

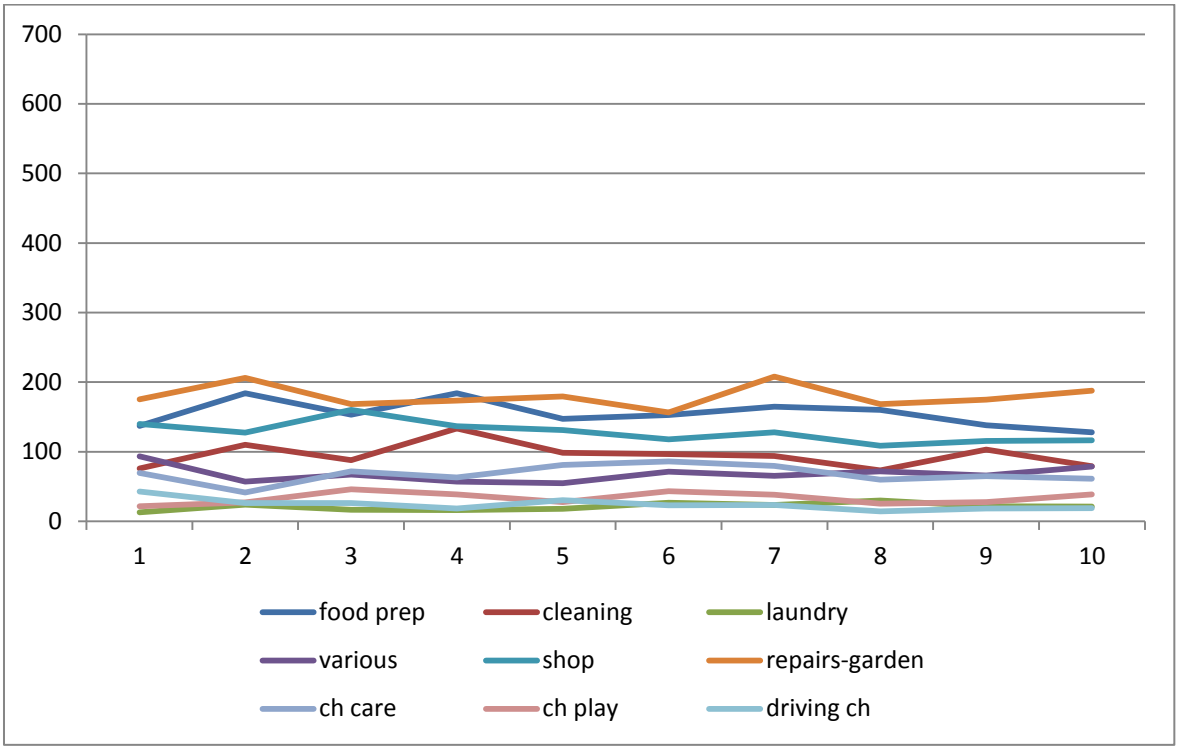


3.3. Women in more affluent households do less house chores, there is no difference across the income distribution for men

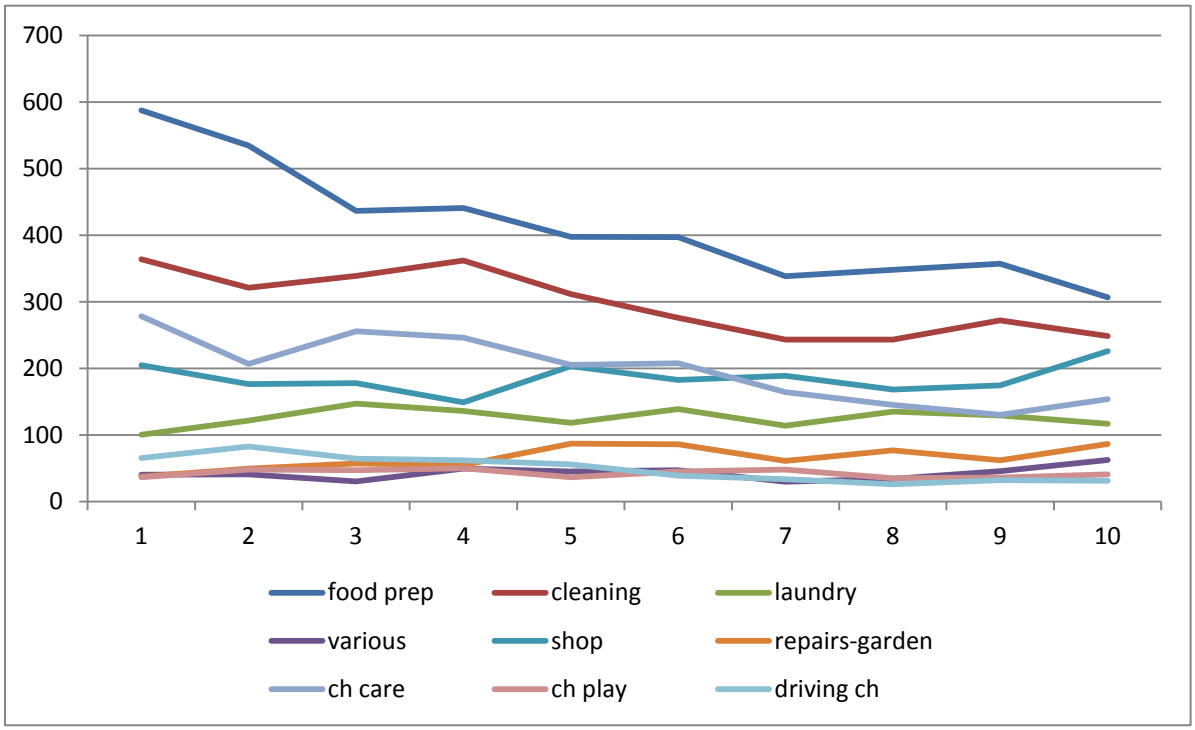
Indeed, graph 11 plots the average time spent in a year by men living in more or less affluent households: it is impressively flat. The scale is purposely large in order to make this graph comparable to the next one, which is the same for women (graph 12).

Here it's obvious that all the time gained by more affluent households on cooking and cleaning is gained by women only: the downward slope in cooking is even sharper, and cleaning the house and material child care are also clearly decreasing. Therefore, it seems that women's cooking and cleaning time is an "inferior good" in the economic sense: the share of her time-budget spent on these activities decreases as income rises. Further analysis would be required to see if this only due to women participating more in the labor market in more affluent households. Still, even if it were the case, it's interesting to see that not all domestic activities participate the same way in the trade-off (apparently concerning women only) between leisure time, paid work time and domestic work time: cooking, cleaning and basic child care are the only activities whose time share decreases with income, maybe because they are mostly time-consuming chores, or maybe because they can more easily be delegated to restaurants, cleaning services and childcare facilities.

Graph 11. Yearly hours devoted to various tasks by men 20 to 60 years old, by living standards decile

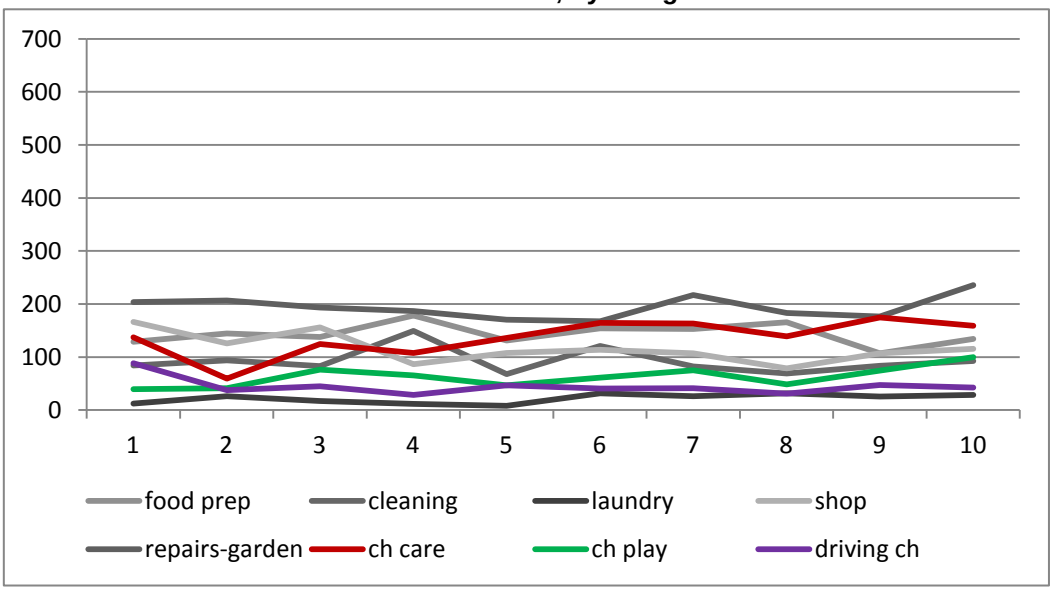


Graph 12. Yearly hours devoted to various tasks by women 20 to 60 years old, by living standards decile



As regards childcare, it's more relevant to focus only on households that include children. Graphs 13a and 13b plot the time spent on domestic work by men and women aged 20 to 60 living with at least one child under 18. The general pattern is the same, but I have highlighted the 3 children-specific activities: material childcare (in red), playing with the child (in green), and driving the child (in purple). Figures are also reported in table 2 and graph 15, for more comparability. There is more noise in the figures because of the reduced number of households considered (sample size: 3600 men and 4500 women). Although the time spent by women on basic child care still dwarfs all other categories, at between 300 and 400 hours yearly compared to between 60 and 160 for men, it is worth noting that time spent by men on childcare appears steadily increasing in living standards deciles. Although less strikingly, time spent engaging in other activities with children by both men and women seems increasing in living standards.

Graph 13a. Yearly hours devoted to various tasks by men 20 to 60 years old with at least one child under 18 in the household, by living standards decile



Graph 13b. Yearly hours devoted to various tasks by men 20 to 60 years old with at least one child under 18 in the household, by living standards decile

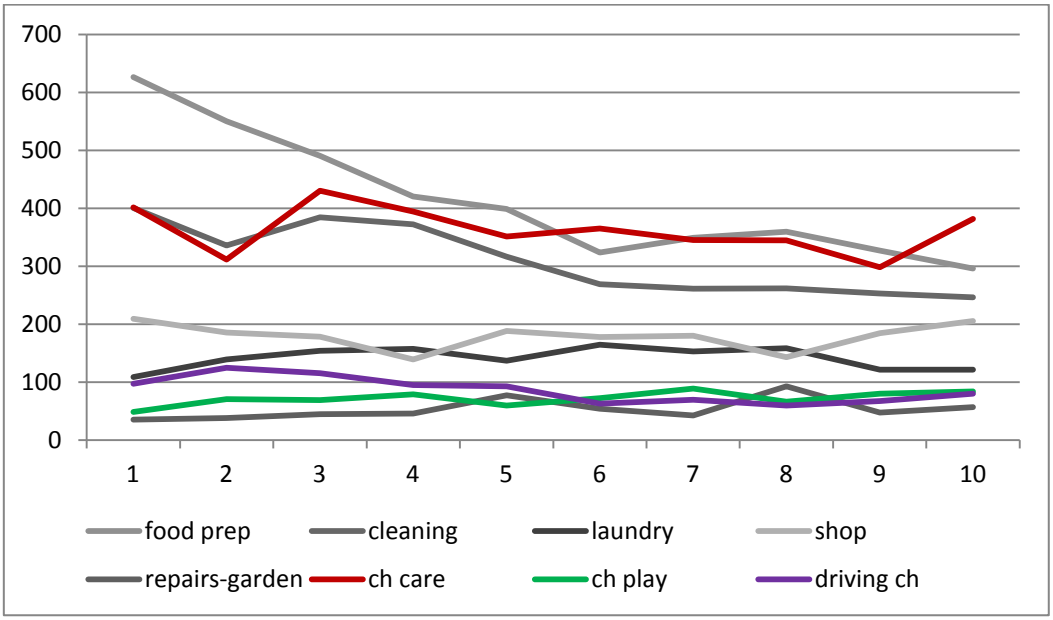
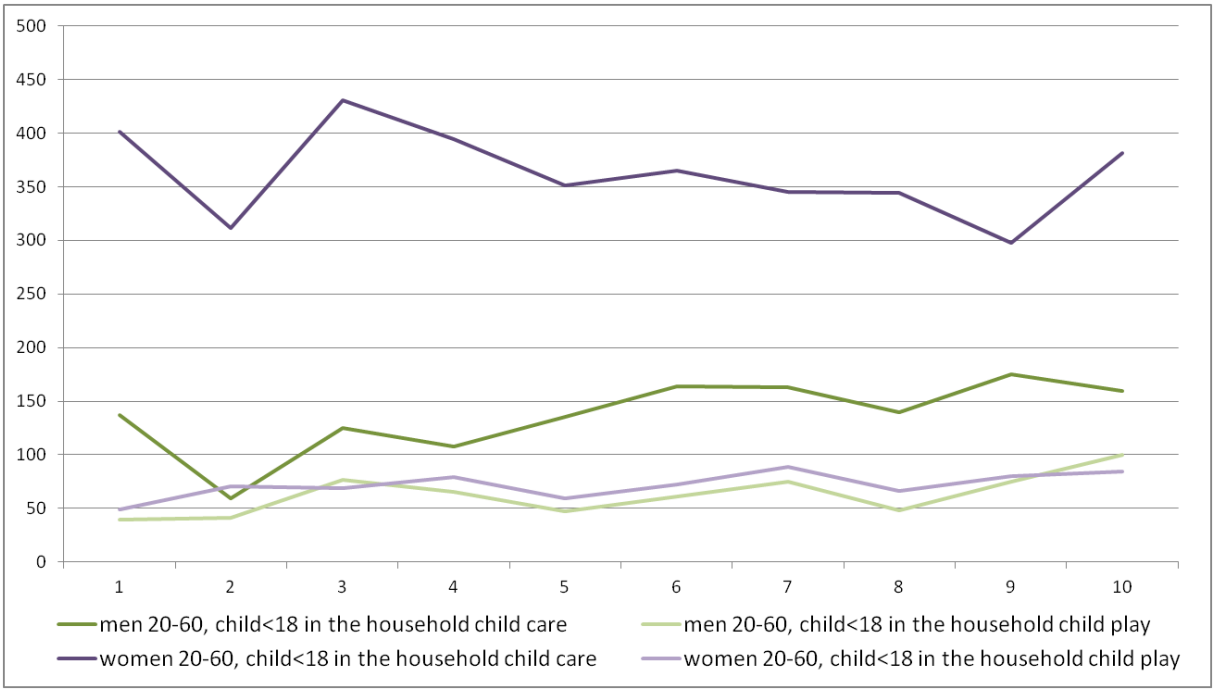


Table 2. Yearly hours spent on child-related tasks by gender and by living standards decile

Living standards decile	men 20-60, child<18 in the household			women 20-60, child<18 in the household		
	child care	child play	driving child	child care	child play	driving child
1	137	39	88	402	49	97
2	59	41	38	311	71	125
3	125	76	45	430	69	115
4	107	66	29	394	79	95
5	136	47	47	351	59	93
6	164	61	41	365	72	63
7	163	75	41	345	89	70
8	139	48	31	345	66	60
9	175	75	47	298	80	67
10	159	100	42	382	84	80

Graph 14. Yearly hours spent on child-related tasks by gender and by living standards decile



Conclusion

This paper is only a first attempt at describing the circulation of domestic work in the economy. It sheds light on its specific "life cycle", marked by the major demographic events of childbirth, retirement and ageing. The arrival of a child in particular requires a sharp increase in the provision of domestic services, to which both the household members themselves (especially the mothers) and outside help contribute. Retirement, on the opposite, makes more time available for domestic work, both for one's own household (gardening time increases) and to help others. There's a peak in domestic work as help between 50 and 70. After 70, though, people start needing help with daily activities and become net consumers, rather than net producers, of household services provided by people outside the household, both paid and unpaid.

As for domestic work by income level, two results stand out. First, total domestic work done by all household members is only slightly decreasing in income. So, when one values it at a wage rate and divides it by the number of consumption unit of the household, the resulting distribution of the extra "income" created by home production is flat across the living standards distribution. This mathematically makes "full income" less unequal than monetary income, but does not show a redistributive effect of unpaid domestic work, either.

A closer look at what types of tasks are increasing or decreasing in income gives a more precise picture: men do roughly the same amount of housework of every kind, no matter what their standards of living. Only childcare, among those who live with children under 18, seems increasing in living standards. On the contrary, the amount of time women spend on house chores varies a lot with their standards of living: cooking, cleaning time are sharply decreasing as one moves from the less well-off to the top of the standards of living distribution. Material child care also decreases, but time spent interacting with children in a more leisurely or educational manner is constant, or even slightly increasing (both for men and women).

But these are only descriptive results, and they suffer from several shortcomings, the first of which is to look only at age, income, gender and the presence of children. These are of course major determinants of the amount of unpaid domestic work done by individuals, but there could be structural differences between the categories that are compared here, such as differences in age across the income distribution, or differences in household composition not properly accounted for by consumption units, as the discussion on equivalence scale showed. An econometric analysis of the amount of time devoted to each task (and not just to "domestic work" as a whole, as was previously done), should therefore be undertaken.

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