

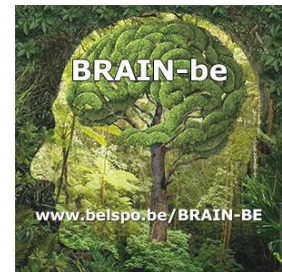
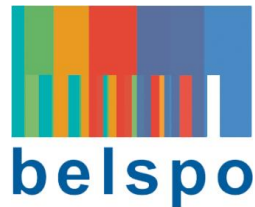


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BRAIN-BE

BELGIAN RESEARCH ACTION THROUGH INTERDISCIPLINARY NETWORK

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**LFS&TIME: A DATABASE ON WORKING CONDITIONS, HOURS AND  
ARRANGEMENTS  
FINAL REPORT - MARCH 2016**

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# Abstract

In this project the Labor Force Survey (LFS), the Work Grid (WG) and the Time Use Survey (TUS) will be merged into one database with detailed information on work related characteristics and working time patterns. For the first time in Europe (by the FPS-Economy) all three surveys are conducted simultaneously among the same respondents and same households according to the EUROSTAT-guidelines.

LFS is considered to be the 'golden standard' for assessing information on the labour force and its background characteristics. An important drawback is however the stylized manner of questioning working hours. Respondents are asked to recall the actual working time for the past week. LFS also contains only limited information on the timing of work. In TUS the respondents register during one weekday and one weekend day all activities (including paid and unpaid work) in full detail (including the place and with whom). The downside of TUS is its limited observation window of only two days. Therefore, working respondents in TUS also have to fill in a 'work grid' (WG) in which the timing of all paid work activities (without extra information) for a full week is recorded.

This new merged data set will combine the strengths of three rich data sources: (1) the detailed work related background information of LFS; (2) the context information of the work activities of TUS and (3) the detailed information on working times in the week cycle of WG.

**Keywords:** LFS; TUS; Work Grid; Working hours; Working arrangements; EUROSTAT

# 1 Project outline

## 1.1 INTRODUCTION

For several reasons, the Labour Force Survey (LFS) is generally considered as a very rich and reliable data source to study economical and social evolutions in European and many non-European countries. Firstly, because EUROSTAT requires its member states to administer these data and monitors the standardisation of methodology and definitions such that a European comparison can be made. Secondly, because the LFS captures data on labour force characteristics and working times. These data allow to study a society's economic situation in terms of gender-equality on the labour market, gross market income, productivity, growth rates, (un)employment, poverty, and well-being on the one hand.

However, when it comes to the length, timing, and scheduling of working times, there is an international growing concern about the working time estimates of the LFS. Partially because its methodology of stylised estimate questions is prone to memory decay and overestimations of work time durations. Partially because flexibility, sovereignty, and weekly patterning of working times are important facets of the current labour market and by no means captured by simple estimates of weekly work time durations (as done in the LFS).

On the other hand, there do exist means by which these facets are accounted for. These methodologies stem from time-diary research as used in Time Use Surveys (TUS) and Work Grids (WG). Strengths of time-diary methodology in TUS are that respondents face a much shorter period of recall because of instantaneous registration of activities, report their activities in their natural temporal order, and need to confine the maximum overall duration to 24 hours a day (so overestimations are largely ruled out). Meanwhile strengths of the methodology of WG is that respondents keep track of one activity (often paid work, hence *work grid*) in a delineated grid for one whole week, compared to two day-diaries of TUS.

The strengths of both methodologies make international scholars often suggest that a merge between the LFS and the TUS and the WG would (1) allow to perform a 'quality check' on the working time estimates derived of the LFS (2), allow calibration of the LFS dataset based on the TUS and the WG, and (3) create a much richer data set because the strengths of the TUS and the WG would fade out the weakness of LFS and vice versa the strengths of the LFS (profound administering of labour force characteristics) would enrich the TUS and the WG. This creates a database that allows the approach of paid work from different angles: length, rhythm, content, and context of labour. However, to meet scientific standards for such a merge and thus a quality check, at least all three surveys have to be administered by the

same respondents. Up to now, this has never been done by a European statistical office nor by the U.S. Bureau of Statistics (which pose the same concerns about estimates of their LFS-equivalent, the Current Population Survey).

However, in January 2013, Statistics Belgium started a deliberately designed research which includes the registration of LFS2013, TUS2013, and WG2013 among the same sample of respondents. This implies the possibility of merging all three datasets and formulate an answer to the international concerns about the biased or distorted working time estimates of the LFS on the one hand, and test the supposed superiority of the newly created database LFS&TIME by running some analyses on labour market issues (one of them is gender-equality of the labour force).

In more statistical terminology, merging the LFS, the TUS, and the WG datasets allow to test the validity and reliability of the LFS data. The relevance of such a merged data set speaks for itself. The LFS data are used to study (the changes in) the status of a country's economy and social status from which, in turn, policy implications or suggestions are derived to overcome gender- or other cultural inequalities on the labour market, poverty, unemployment, and so on. From this, it follows that if data are collected to unravel (changes in) the organisation of society and to evaluate existing and support new interventions that in turn affect the organisation of society, an important prerequisite is that these data meet the qualitative, scientific standards.

## 1.2 PROJECT DESIGN

As outlined above, the main goals of this project are (1) to merge three databases (Labour Force Survey [LFS], Time Use Survey [TUS] and Work Grid [WG]) that inquire, amongst other things, working time estimates and working time characteristics, (2) to compare/test working time estimates inquired by different surveys/methodologies, (3) demonstrate/test the added value of the created database in handling social issues. The LFS&TIME project thus rests on three main pillars: creating the LFS&TIME database, evaluate the reliability and validity of economic parameters, and validate its strengths in terms of studying social-economic issues (see Figure 1).

The Research Group TOR of the Vrije Universiteit Brussel conducted the preparation, merging, calibration and dissemination of a European database of the LFS, TUS and WG data. It also designed and implemented the public terminal, tested the LFS&TIME database for its validity concerning working time estimates, conducted one of the three case testing studies, and wrote a recommendation note to EUROSTAT. The Institute for Analysis of Change in Contemporary and Historical Societies of the Université Catholique de Louvain

conducted a literature study on the reliability of measuring working times, conducted two of the three case testing studies, and organised the colloquium on work/life interference.

All three pillars and their underlying tasks will be briefly discussed in this final report. Since many of these tasks have reports or working papers as their finality, only summaries of results will be given and reports and working papers will be referenced to or be included in the appendix to this document.

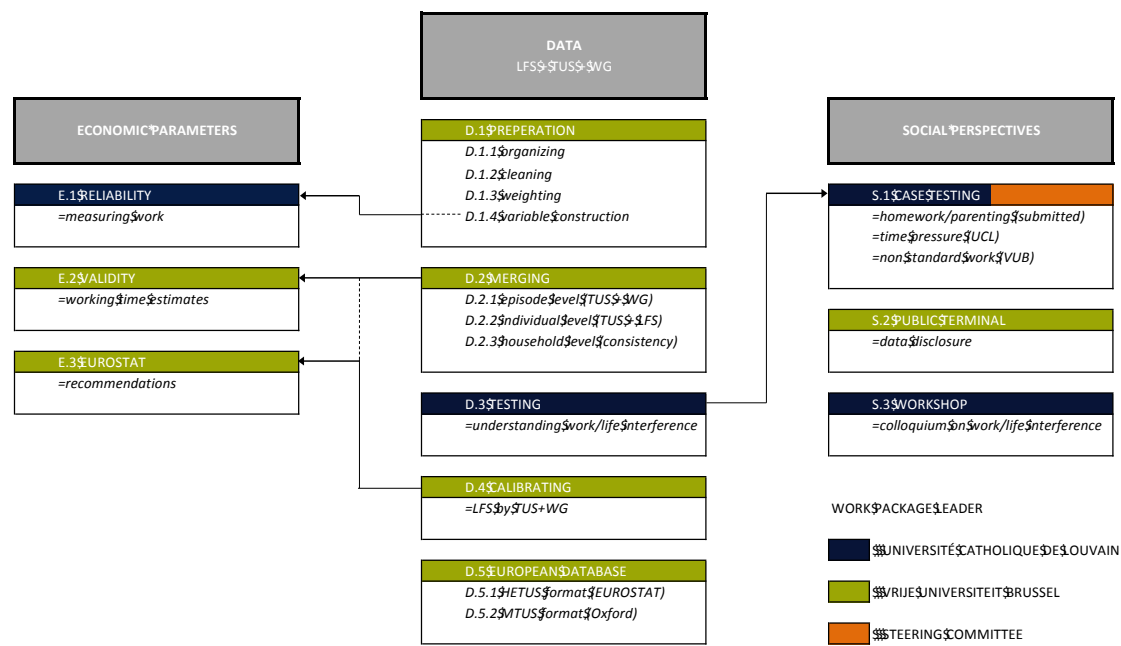


Figure 1. LFS&TIME Project design

### 1.3 PROJECT RESEARCHERS

Prof. Dr. Ignace Glorieux of the Research Group TOR of the Vrije Universiteit Brussel (TOR-VUB) was the promotor of this project and Prof. Dr. Bernard Fusulier of the Institute for Analysis of Change in Contemporary and Historical Societies of the Université Catholique de Louvain (IACCHOS-UCL) was the co-promotor of this project. Daily management of the project was in hands of senior researchers Joeri Minnen and Theun Pieter van Tienoven (VUB-TOR) and junior researchers Antoine Delporte and Sarah Van Hollebeke (IACCHOS-UCL) and Eszter Meszaros, Jef Deyaert and Kyra de Korte (VUB-TOR) executed research tasks.

## 1.4 STEERING COMMITTEE

The project was also monitored by a steering committee led by Mr. Aziz Naji from the Belgian Research Action through Interdisciplinary Networks (BRAIN). The following people had a seat on the steering committee (in alphabetical order):

- Hélène Carpiaux (CRESAM)
- Delphine Chabbert (Ligue des familles)
- Marie-Astrid Drèze (Forem)
- Florence Meessen (Conseil Central de l'économie)
- Lydia Merckx (Statistics Belgium)
- Michel Pasteel (Instituut voor de gelijkheid van mannen en vrouwen)
- Astrid Romain (Institut Bruxellois de Statistique et d'Analyse).
- Christian Valenduc (FOD Financiën)
- Katrijn Vanderweyden (SERV)
- Lutgard Vrints (Gezinsbond VZW)
- Beatrice Van Haeperen (IWEPS)

The steering committee met three times during the project runtime. The aim and contribution of the meetings are as follows:

**24 November 2014** – Aim: give the project outline, explain the strength of the combined database, and invite members of the committee to provide cases for testing the combined strength of the data. Contributions: due to provincial strike few members were present, only one case has been submitted.

**31 March 2015** – Aim: present results on reliability and validity, and the conceptualization of the cases, and present the outline of the colloquium. Contributions: discussion of understanding the discrepancies between working time estimates and working time characteristics derived from the LFS, the WG and the TUS by experts, feedback on the conceptualization of the cases, brainstorming on the colloquium (who to invite, what themes to address, what speakers to invite...).



**15 February 2016** – Aim: present results on validity, results of the case testing, the public terminal, and discuss the details of the colloquium. Contributions: discussion on the scheduling of part time work as derived from the WG compared to the single question in LFS, presentation of gender inequality in subjective time pressure, presentation of detailed level of activities in TUS by analysing homework supervision, presentation of the usefulness of the WG in conceptualizing subordinate flexibility as compared to questions on flexibility in the LFS, live presentation of the public terminal of TUS ([www.time-use.be](http://www.time-use.be)), discussion on the details of the colloquium and final division of tasks in preparation towards this colloquium.

## 2 Databases

This section is based on the following report:

Glorieux, I., J. Minnen, T.P. van Tienoven, C. Vanderhoeft, S. Daniels, K. de Korte, J. Deyaert, J. Magits, E. Meszaros, J. Verbeylen, D. Weenas (2015). *Technical Report BTUS13. Technical report of the 2013 Belgian Time Use Survey (BTUS13)*. Brussels: Vrije Universiteit Brussel, Sociology Department, Research Group TOR.

Available at: [http://socipc1.vub.ac.be/torwebdat/publications/t2015\\_28.pdf](http://socipc1.vub.ac.be/torwebdat/publications/t2015_28.pdf).

### 2.1 INTRODUCTION

The TUS was conducted among a household subsample of the LFS (after completion of the LFS by CAPI) and ran from January 2013 to February 2014. All household members aged 10 and above were asked to complete two paper time-diaries for a weekday and a weekend day. Days were randomly assigned to the household. In this time-diary respondents registered in own wordings their main activity, secondary activity and location of the activities in 10-minute time intervals starting at 4 am and ending at 4 am the next day. Using checkboxes respondents also provided information on the presence of others during the activities.

Each household member of 18 years and older with a paid job (employee, self-employed, assisting household member) was also asked to fill in a seven-day work grid. The first registration day in the work grid concurred with the first day of the respondents' time-diary. Respondents had to indicate their working times by drawing a line through or coloring 15-minute time slot on a 24h horizontal grid that ran from 4am till 4 am the next day.

All data (LFS, TUS and WG) were separately imputed by Statistics Belgium of the FPS Economy. Data were anonymized, encrypted, and sent to the Research Group TOR via a secure server for further cleaning and analyses in function of this project's aim.

## 2.2 DATA PREPARATION

*Organizing datasets:* this includes creating unique identifiers in each dataset, create sub datasets (e.g. adult questionnaire and youngster questionnaire of TUS), and handle missing data (e.g. not all respondents of LFS completed the TUS and not all respondents of TUS completed the WG).

*Cleaning datasets:* this includes investigating the number of missing answers in the questionnaires and making decisions on preserving or deleting respondents with a certain number of missing answers. It also includes some quality checks of the TUS, amongst other things, checking the number of hours reported (i.e. this should be 24 hours), checking the number of activities registered, checking the time spent on biologically necessary activities (e.g. sleep and eating), checking the amount of unspecified time, and making decisions on the preservation of cases that contained extreme values on one or more of these quality checks.

*Weighting datasets:* the aim is to let the datasets be an accurate representation of the population and therefore several weighting coefficients are calculated, amongst other things, post stratification weights that includes gender, age and education and/or region and/or a correction for trimester of the fieldwork.

*Variable construction:* in function of the results of the literature study on defining work (see section 3.1) and the measurements needed to make validity checks (see section 3.2) several new variables had to be constructed, as there are, for example, duration of night work, duration of evening work, duration of weekend work, a combination of the aforementioned variables to construct an indicator of working on atypical hours, *et cetera*. Additionally, in function of the construction of the public terminal, several socio-demographic variables had to be constructed that are easy to use and, most importantly, are comparable to the socio-demographic variables of the earlier 1999 and 2005 Belgian Time Use Surveys.

## 2.3 DATA MERGING

*Merging at the episode level:* from the introduction it became clear that the TUS inquires the use of time in 10 minute intervals whereas the WG inquires the use of (working) time in 15 minute intervals. To merge the TUS and WG at the episode level, both databases had to be converted into the lowest common denominator (i.e. 5-minute intervals). Additionally, from the WG only the weekday and weekend day that concur with the weekday and weekend day in the TUS had to be selected.

*Merging at the individual level:* to merge the TUS and the WG with the individual LFS database, both the TUS and the WG had to be aggregated to the individual level, taking into account the division of days into weekdays and weekend days.

*Merging at the household level:* in the aggregated individual LFS&TIME database all individuals are represented by single lines, meaning that members of the same household are represented as 'isolated' individuals. In order to get a ready to use database for household analyses, the individual data had to be aggregated once more resulting in a database in which households are represented by lines and all time use of the members of the same household are on that line (but still identifiable).

## 2.4 DATA TESTING

The in section 2.3 described databases were converted into accessible and workable files to be used for case testing in order to demonstrate the strength of this data merger (see further section 4).

## 2.5 CALIBRATING

Given the validity checks of working time estimates (see section 3.2), it was assumed that a weighting algorithm could be formulated that would allow multiplying the LFS working time estimates in order to get more reliable results. This assumption turned out to be more complicated than expected, hence, with approval from the steering committee (see section 1.4), the project resources are assigned to more research related to the validity of the working time estimates. This resulted in two working papers, one related to working time estimates (see section 3.3.1) and one related to part-time work (see section 3.3.2). At the moment of writing this final report, no such weighting algorithms have been calculated.

## 2.6 EUROPEAN DATABASE

EUROSTAT requires Statistics Belgium to submit their Belgian TUS to a harmonized European time use data. Although not explicitly formulated as a finality of the project, in line with data preparations as described in section 2.2, the TUS are also recoded and restructured in line with the guidelines for the Harmonized European Time Use Surveys, such that Statistics Belgium finds itself in accordance with EUROSTAT requirements for Time Use Surveys.

## 3 Economic parameters

### 3.1 INTRODUCTION

When it comes to estimate working times and working time characteristics (e.g. non-standard work), two issues arise: (a) how is work defined by the researcher or – in case of absence of a clear definition – how is work conceptualised by the respondent and (b) do all methodologies capture working time and working time characteristics in the same way. We summarize the former under the heading of *reliability* and the latter under the heading of *validity*.

### 3.2 RELIABILITY

In order to measure work, it is crucial to understand how work is approached/defined by researchers and/or perceived by respondents and thus this project investigated the concept of reliability. On the one hand, a substantial meta-review of the different conceptualizations of working time in scholarly literature (see section 3.2.1) and on the other hand, a conceptual proposal of defining working time in the different datasets (see section 3.2.2) has been made. The findings are of importance for testing the validity of working time estimates (see section 3.3) and the added value of the combined database for studying social issues (see section 4.2).

#### 3.2.1 Conceptualizations of work

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This section is based on the following report:

Fusulier, B. & S. Van Hollebeke (2015). *Reliability: Measuring work. LFS&TIME WORKING PAPER 1*. Louvain la Neuve: Université catholique de Louvain, Institute for Analysis of Change in Contemporary and Historical.

Available in Appendix A.

The literature review on working time estimates shows that the model of standard employment and the organization of social times in the “Fordist” regime of the labour society have been disrupted through a deep crisis and socio-economic transformations. Several mutations in the temporal and spatial boundaries of work have appeared, and several authors have claimed that it had contributed to the emergence of a 24/7 society. In this “post-Fordist” labour society, the boundaries of work are more and more blurring. With the spread of non-standard schedules, several authors such as Harriet Presser have pointed to the negative consequences of the interference of the professional sphere on the family and health (marital instability, transformation of childcare, burn out etc.). The question of synchronization and desynchronisation has become a new socio-economical issue linked to temporal relationships (with positive or negative impacts in terms of well being, work/life balance, productivity, etc.). We still live in a labour society but we are step-by-step moving to a multi-active society, with a strong porosity of social times. We can no longer use a radical distinction between constrained time and free time but we should think about the overflowing of work’s concern on domestic sphere and vice versa, there is a mutual influence between the work and private sphere; so the importance of the concept of interference. The definition of work has evolved toward a broader sense, which includes several dimensions such as paid work, care work, domestic work, civic work, *et cetera*.

### 3.2.2 Conceptual proposal of defining work

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The different datasets allow different approaches to work and working times, each with their strengths and weaknesses. Three approaches are conceptualized:

*Global approach:* the LFS allows a global approach. Its strength is, amongst other things, that it also inquires the legal framework and status of work (i.e. employment) and makes a distinction between time spent in main and second job. Its weakness is, amongst other things, that it inquires the timing of work superficially.

*Focused approach:* the WG allows a more focused approach with respect to the timing of work since beginning and ending times on all weekdays are known (its strength). However, there is no distinction between main and second job and no additional job information (its weakness).

*Contextual approach:* the TUS allows a contextual approach, that is, it contains information on the timing and location of work, that is, at what times of the day people work at home or at the workplace and it contains information of how paid work is embedded in daily activities, that is, what do people do before and after work (its strength). However, it inquires only one weekday and one weekend day and misses additional job information (its weakness).

An example: the LFS asks people to indicate part-time work in terms of a percentage of a full time job, the WG shows at what (period of) days this part-time work is situated (e.g. Friday off or Wednesday afternoon off), the TUS reveals an indication of why people work part-time (e.g. because Wednesday afternoon is occupied with childcare), and, to make the circle round, the LFS then contains information on, for instance, sector of employment or job sovereignty so that we can study what jobs lend themselves to work part-time and/or combine work and childcare responsibilities.

### 3.3 VALIDITY

Validity, in this case, concerns getting the same results for working time estimates when using different methods inquiring the same concept. Using two levels of merging this project investigated/compared the individual working time estimates of the LFS, TUS and WG on the one hand, and the episodic concordance of working times in the TUS and the WG (see section 3.3.1). Additionally it investigated the issue of part-time work by comparing the single question on part-time work in the LFS with the 7-day registration of part-time work in the WG. The findings are of crucial importance to evaluate the use of economic parameters used for policy purposes and/or cross-country comparisons of economic activity.

#### 3.3.1 Working time estimates

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This section is based on the following report:

De Korte, K., J. Deyaert, I. Glorieux, E. Meszaros, J. Minnen & T.P. van Tienoven\* (2016). *Validity: Measuring work. LFS&TIME WORKING PAPER 2*. Brussels: Vrije Universiteit Brussel, Sociology Dept., Research Group TOR.

\*Authors in alphabetical order; all authors contributed equally to this working paper

Available in Appendix B.

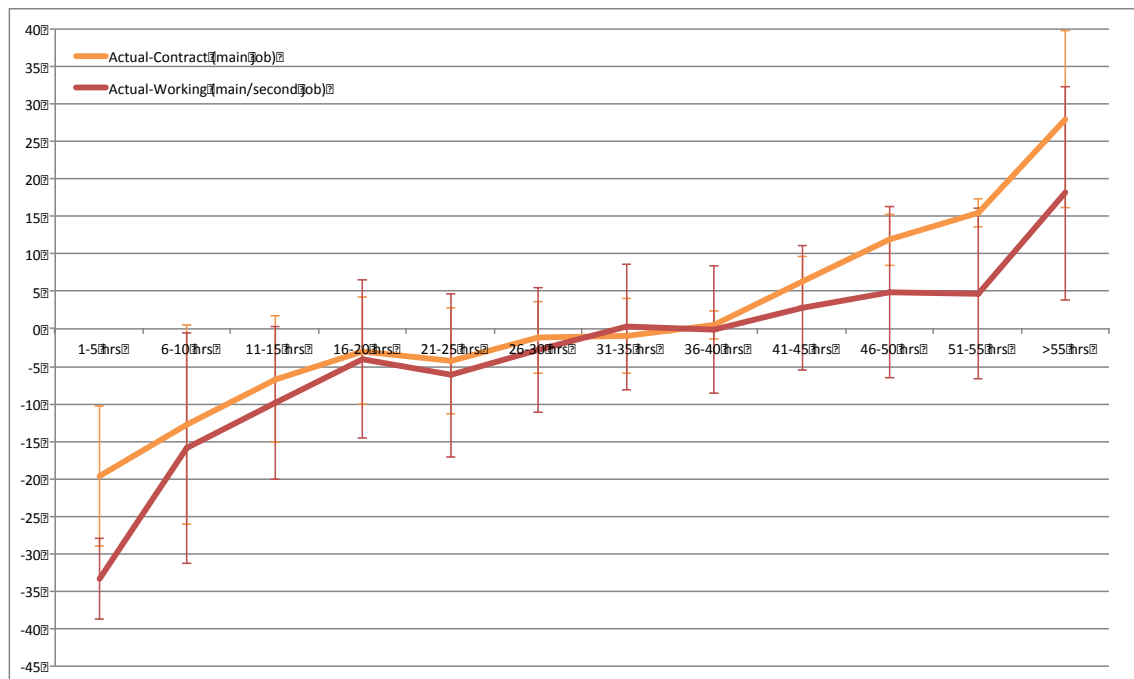
In Figures 2 and 3 we compare the answers of respondents in the LFS-questions on their contractual hours and their actual hours for their main job (orange line). If the line goes below 0, this means that the estimated actual hours are less than the contractual hours, if

the line goes above 0, this means that the estimated actual hours are exceed the contractual hours.

For the red line we compared the actual worked hours for main and second job in LFS with the worked hours for main and second job in the WG. This entails the same week, hence if the red line goes below 0, there is an underestimation of working hours in the LFS and if the red line goes above 0, there is an overestimation of working hours in the LFS.

If we select employees (not self-employed) that have contractual working hours  $>0$  and  $\leq 40$ , that worked at least 1 hour in the reference week and indicated that their reference week was a usual week (note: subjective notion of the respondent), we find that (see Figure 2):

- Average weekly contractual hours in LFS (33.6) and average weekly actual hours in LFS (33.9) for the main job differ only by 18 minutes.
- Average weekly actual hours in LFS (34.5) and average weekly worked hours in the WG (35.6) for main and second job differ by 1.2 hours.
- Employees that estimate their weekly actual hours in the LFS to be greater than 40 hours overestimate their weekly actual hours in LFS in comparison to weekly worked hours in the WG.

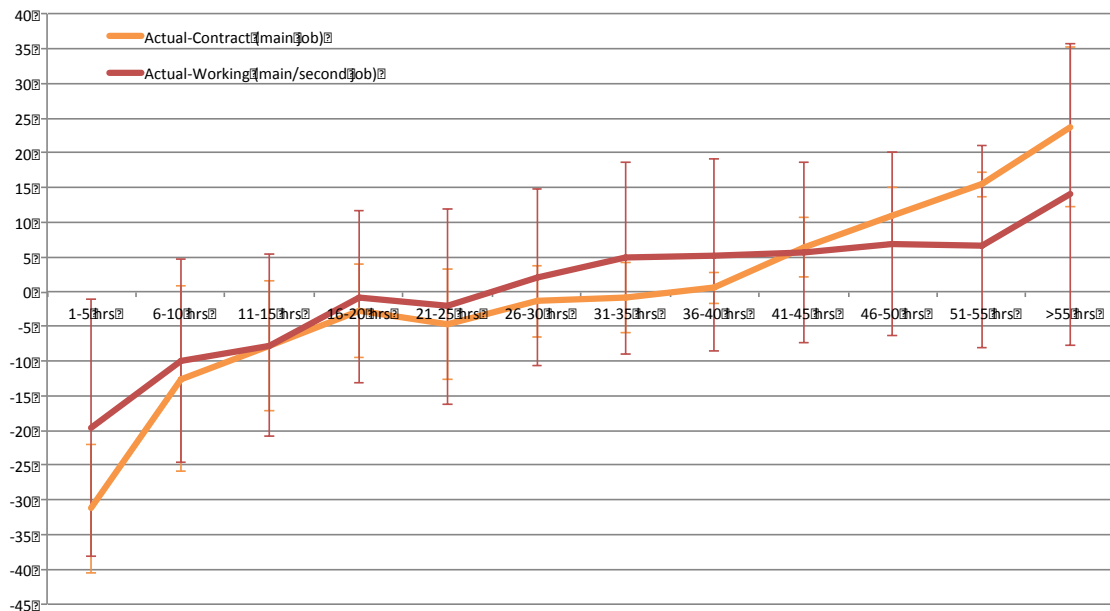


**Figure 2. Comparison LFS and WG for contractual hours  $>0$  or  $\leq 40$  / working hours  $>0$ ; normal workweek  $n=1,331$ . Error bars represent  $\pm 1SD$  from the mean.**



If we select all employed people (including self employed) and leave out the distinction between usual or unusual week, we find that (see Figure 3):

- Average weekly actual hours in LFS for the main job (30.9) is much lower than the average contractual hours in LFS (33.4) for the main job.
- Average weekly actual hours in LFS for main and second job (31.5) are higher than the average working hours for main and second job in the WG (29.4).
- Departing from the WG, employees that estimate their weekly actual hours in the LFS to be less than 25 hours a week underestimated their weekly worked hours and employees that estimate their weekly actual hours in the LFS to be greater than 25 hours a week overestimated their weekly worked hours.

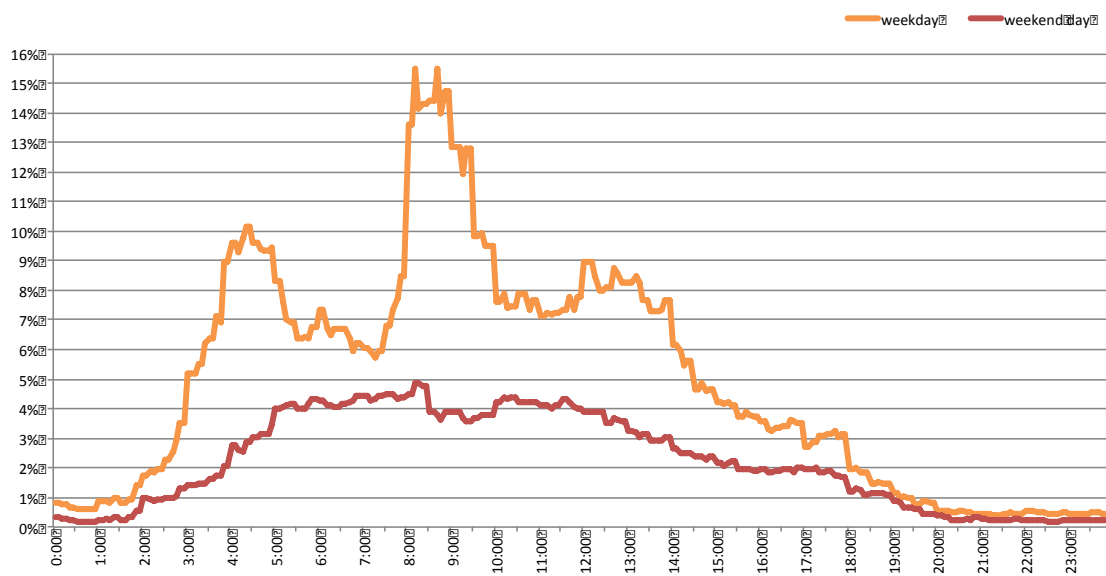


**Figure 3. Comparison LFS and WG including not normal week and self-employed; n=2,599. Error bars represent  $\pm 1SD$  from the mean.**

In Figure 4 we equate the WG with the TUS for the concurring working day only (note: in TUS only one weekday was completed). At the episode level we compare whether each episode in the WG and the TUS contain the same information (i.e. work or no work). If not, we mark this episode as a mismatch. The orange line plots the mismatch of episodes during an average weekday, the red line for an average weekend day. The y-axis represents the percentage of mismatch for a certain episode as displayed on the x-axis.

If we equate the episodes in the TUS and the WG and compare the weekday completed in the TUS with the concurring weekday in the WG, we find that (see Figure 4):

- In 3.6% of the episodes there is a mismatch, in 2.0% work is registered in the WG but not in the TUS (and in 1.6% the other way around).
- The rhythm of the weekday (orange line) suggests that these mismatches occur on the fringes of the workday and relate to travel and lunch breaks. Further analyses show this to be the case: the mismatch is mainly the result of travel counted as work (25%), lunch counted as work (24%) and unpaid work counted as work (22%).



**Figure 4. Comparison mismatch of WG and TUS at episode level.**

From these results we derive two main conclusions:

- The WG results in better working time estimates than the LFS because of its registration method (i.e. realtime in WG vs. recall in LFS).
- The TUS shows, however, that the WG is not completely infallible, because 'mistakes' are made when work-related (but nonetheless non-work) activities, like lunch breaks or travel time, are still registered as work the WG.

### 3.3.2 Part-time work

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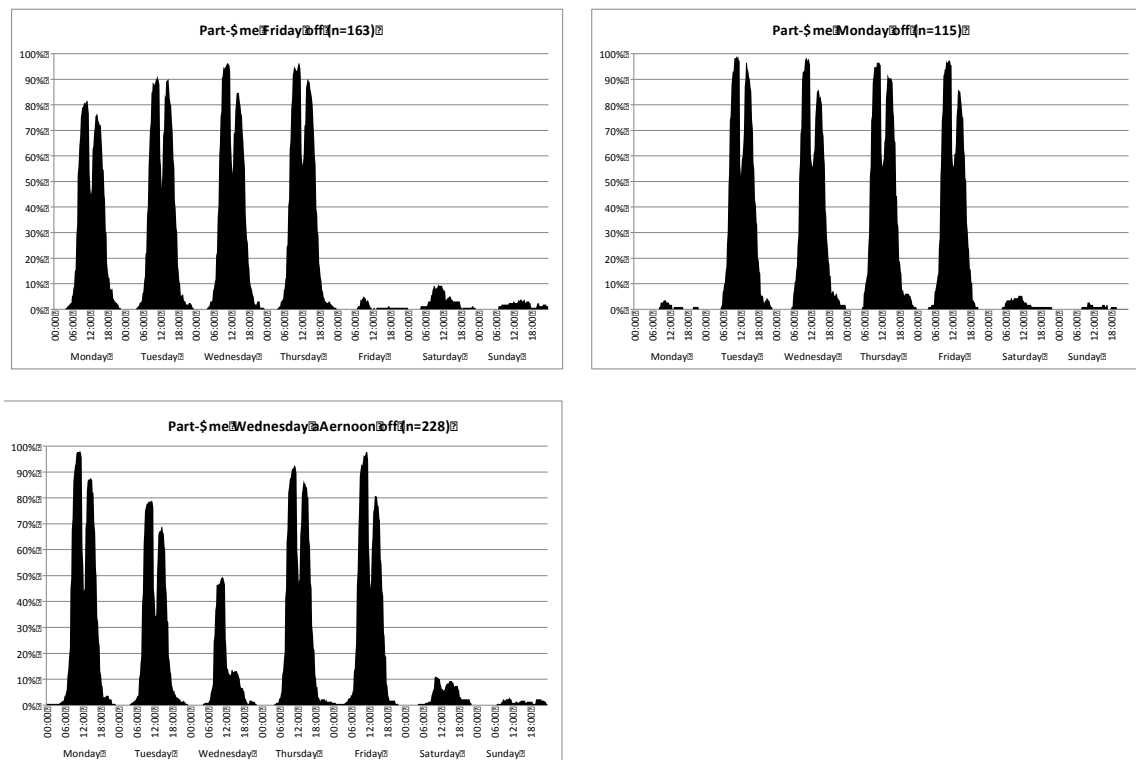
This section is based on the following report:

De Korte, K., J. Deyaert, I. Glorieux, E. Meszaros, J. Minnen & T.P. van Tienoven (2016)\*.  
Validity: *Part-time work patterns. LFS&TIME WORKING PAPER 3*. Brussels: Vrije Universiteit  
Brussel, Sociology Dept., Research Group TOR.

\*Authors in alphabetical order; all authors contributed equally to this working paper

Available in Appendix C.

The grid structure of the WG facilitates analyses based on a quite complex analytical method named *optimal matching*. The WG can be pictured as a sequence of 672 (7 days multiplied by 96 15-minute intervals per day) 15-minute intervals that contain either a 1 (e.g. work) or a 0 (e.g. non-work). The analytical strategy applied, then, compares all these sequences with each other and in the end clusters sequences that are homogenous in their juxtaposition of 1's and 0's. These are the work-patterns and when it comes to part-time work, it is fairly easy to identify what are generally assumed to be the three of the most common patterns of part-time work: 4/5 with Monday off (5.0% of sample), 4/5 with Friday off (7.0% of sample), and 5/5 with Wednesday afternoon off (9.8% of sample) (see Figure 5). There are more patterns of part-time work, but they do not present themselves by clearly identifying which (part of the) day is not worked and are merely the result of working less than 38 hours per week.



**Figure 5. Three types of part-time work patterns**

The main question of concern here is whether the LFS in one way or another is able to identify these different patterns of part-time work and of what importance it is to identify these different patterns. The main conclusions are:

- The LFS only asks participants if they work part-time and, if so, to express the amount of part-time work as a percentages of a Full Time Equivalent (FTE). Based on this information, the answers do not vary much between the identified patterns of part-time work. Part-time workers with Wednesday afternoon off report 70.9% of FTE, those with Monday off report 74.1% of FTE, and those with Friday off report 71.8% FTE. Moreover, based on this information it is impossible to distinguish between different patterns of part-time work.
- Part-time contracted employees working in these part-time patterns are mainly women. Participants having a pattern with Friday off are found in an older age group (55-64y.~49.7% within this pattern) than those with Wednesday afternoon off (25-39y.~39.5% within this pattern). Moreover, participants with Wednesday afternoon off typically have a partner and young children (~67.6% within this pattern), whereas participants with a Monday or Friday off have a partner but no children or children over 25 years old (~respectively 39.6% and 43.1% within this pattern).

- 25.9% of the workers with a Wednesday afternoon off are employed in the public sector as a statutory civil servant. That is significantly higher than the 18.6% of statutory civil servants in the total sample.
- Assuming that the identified patterns are patterns of part-time work only, is not correct. A large proportion of the participants following these work patterns in their registration week are, nonetheless, fulltime employed (Wednesday afternoon off~60.1%, Monday off~85.2%, Friday off~71.8%). This indicates that the “normal” workweek is disappearing or never existed!

These brief conclusions demonstrate that understanding work in contemporary society is complex and whereas the LFS is a good instrument to capture job characteristics it fails to (1) capture working time arrangements and (2) understand why and how these working time arrangements interact with other domains of daily life.

### 3.4 EUROSTAT RECOMMENDATIONS

From the results described in section 3.3 it becomes clear that, taking into account the contemporary change of the time structure and allocation (working time especially), the additional detail in working time estimates (with respect to the working time) as well as the greater accuracy of working time estimates of the Work grid (WG) in relation to the working time estimates and working time characteristics of the Labour Force Survey (LFS) provide much better estimates of working times, part-time work and non-standard work. Given that completing the WG requires little extra effort, recommendations to the FPS Economy and EUROSTAT entail that a WG should be included as an obligatory element in the LFS. Some hurdles need to be overtaken, for example, it takes 7 days to complete the WG so a second visit of a pollster is needed to pick up the complete WG, but with increasing dispersion of ICT over households, an online WG might serve well. Anyhow, the additional information from the WG is many times more valuable than the costs of these organisational difficulties.

## 4 Social perspectives

### 4.1 CASE TESTING

The combination of different datasets implies an added value for studying social issues because every dataset includes different details on working time estimates and working time characteristics. To demonstrate and test the strength of these data one of the project aims was to work out three cases that relate to work/life interference and make use of information present in at least two of the three datasets merged into the LFS&TIME database. To improve interaction with and commitment of the steering committee, a call was put out to the members of the steering committee to submit case studies of their interest. One case study was submitted (see section 4.1.1). Both the UCL (see section 4.1.2) and the VUB (see section 4.1.3) added a case study of their interest.

#### 4.1.1 Homework supervision

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This section is based on the following working papers:

Fusulier, B., A. Delporte (2016). *Homework supervision. LFS&TIME WORKING PAPER 4*. Louvain la Neuve: Université catholique de Louvain, Institute for Analysis of Change in Contemporary and Historical Societies.

Available in Appendix D.

The central question to this case testing is whether parents (try to) adapt their work schedules to be able to help their children with homework. To answer this question, the LFS provides information on job characteristics, flexible work schedules, *et cetera*; the WG provides information on weekly work schedules, and the TUS provides information on activities that are (or might be) linked to homework, either directly, e.g. "help with school and homework", or indirectly, e.g. by using the contextual information of presence of others (to test the availability hypothesis). Anyhow, even though the activity is very specific, this case testing demonstrates how the TUS enriches the LFS en WG by allowing studying the interference of work with other (daily) activities.

- Women are two times more likely to do homework supervision than men.
- The more children the more likely parents are supervising homework.
- Families with only one child are those least likely to see people get involved in homework supervision.
- Cross tabulations reveal that there is reason to assume that the higher the workload (especially for self-employed) the lower the involvement in homework supervision, however, the small population reduces the opportunities to infer these results to a wider population.

Despite these minor significant results, it becomes clear that the combined LFS, WG and TUS data also allow studying situations (like homework supervision) that are only influenced in the margin by work-related factors, something that cannot be done using only one of the datasets.

#### 4.1.2 Time pressure

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This section is based on the following working papers:

Fusulier, B. & A. Delporte (2015). *Case testing 2: Being rushed and time pressure. LFS&TIME WORKING PAPER 5*. Louvain la Neuve: Université catholique de Louvain, Institute for Analysis of Change in Contemporary and Historical Societies.

Available in Appendix E.

The feeling of time pressure generally arises when multiple social roles fight for time: being a successful employer, a caring parent, dedicatedly running a household and actively participating in social and leisure activities. When it comes to the latter three roles, the TUS data has detailed information on the performance of household tasks and childcare activities. However, information on working hours and arrangements as well as job characteristics is often relatively scarce. The WG (for working hours and arrangements) and the LFS (for job characteristics) provide very useful information on the 'social role' of being a worker. The TUS, in turn, contains item scales on time-pressure. The combined data, thus, contain detailed information to study the daily life of rushed men and women at the fullest.

When it comes to time-pressure, regression models show that:

- Men having both a partner and a child under seven years and self employed form the highest level of correlation with the creation of a sense of time pressure, while working in the evening turns out to have a slightly less important influence.
- Men's proportion of time dedicated to leisure every week will help to alleviate the pressure they may experience, although it appears to be at the lowest level of influence.
- For women all family configurations (apart from single women without children) have a very important correlation with the feeling of time pressure.
- Women's age plays an important role, especially women in the age group of 30-44 years, which often is when the family situation of women is changing with the arrival of children.
- Women's educational level is important and the feeling of time pressure is stronger for the "medium" category in comparison with the less educated women.
- Women's total working time can have an impact on the feeling of time pressure while time dedicated to leisure and the diversity of these can cause a decrease in the feeling.

### 4.1.3 Flexibility

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This section is based on the following working papers:

De Korte, K., J. Deyaert, I. Glorieux, E. Meszaros, J. Minnen & T.P. van Tienoven (2015)\*. *Case testing 3: Subordinate flexibility. LFS&TIME WORKING PAPER 6*. Brussels: Vrije Universiteit Brussel, Sociology Dept., Research Group TOR.

\*Authors in alphabetical order; all authors contributed equally to this working paper

Available in Appendix F.

Flexibility, nowadays, seems to be a generic term for working in various degrees on a variety of atypical working hours (evening, night, Saturday, Sunday, shifts) in combination with a number of job characteristics (type of occupation, sector of employment, labour statute, etcetera). Whereas the WG provides detailed information on the dispersion of working hours over the day, evening, night and day of the week, the LFS contains survey information on job hour contracts, job characteristics and socio-economic backgrounds. It becomes clear



that combining both datasets provides a rich database to study the phenomenon of working on a-typical hours. The main findings are presented below.

*Not a 24/7 economy* – Belgium is far from a 24-hour economy. Almost 9 on 10 workers perform work at typical times (6 am and 7 pm), with night work and work on Sunday being extremely rare. Moreover, 70% has a set schedule and less than 6% has to cope with shift work.

*A scale of flexibility* – The degree of work performed on the different a-typical working hours can be reduced to a one-dimensional scale measuring flexibility (Cronbach's Alpha=0.828, Eigenvalue=3.223, 53.7% of variance explained). Regularly performing night work, shift work or Sunday work are at the one extreme of the scale of flexibility whereas always working during day hours, never during Saturday or Sunday, and with set schedules are at the other extreme.

*Social dispersion of flexibility* – Self-employed, social professionals, men, and higher educated people with a have the highest required flexibility. Self-employed leaders and sales personnel face a relatively high subordinate flexibility in comparison with the other type of contracts and type of jobs. The lowest flexibility was found among workers in the private sector, clerks, women, and the higher educated. Government officials with an educational level of lower than ASO seem to be 'the best off': they have the lowest subordinate flexibility regardless the job type. All in all, the job characteristics seem to be more important than socio-economic background variables when it comes to working times.

## 4.2 PUBLIC TERMINAL

### 4.2.1 Introduction

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The website [http://www.time\\_use.be](http://www.time_use.be) gives an overview of the time use of Belgian people living in Brussels, Flanders and Wallonia in 1999, 2005 and 2013. It came to existence as a cooperation project between the Research group TOR of the Vrije Universiteit Brussel, Statistics Belgium and BELSPO.

The time use of the respondents was registered based on a diary, in accordance with the guidelines of EUROSTAT, wherein the respondents noted all activities in their own words during one weekday (from Monday until Friday) and one weekend day (Saturday or Sunday) in 10 minute intervals.

In 1999, 8.382 respondents of 10 years and older from 4.275 households filled in their diaries during two days. In 2005 the number of respondents was 6.400 from 3.474 households. In 2013 the number of respondents was 5.559 from 2.744 households.

The sampling happened on the level of households. This means that family members of 10 or older had to fill in the diaries. All the members of the household had to fill in the diaries on the same registration days. Next to all their activities, the respondents also noted information about the place of the activity, the persons present and (if possible) the mode of transportation.

### 4.2.2 Making your own tables

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This website provides the possibility to get an extensive overview of the time use of the Belgian population of 12 years and older over the years 1999, 2005 and 2013. By using the tables, you can analyze the time use of the Belgian population per day, per week and broken down by several background characteristics. Here you can make your own tables based on your own interests.

By choosing the tab 'Tables' in the menu above it is possible to get a first insight into the time use of Belgians. For this, no or very few expertise is needed ('normal modus'). In case you are more familiar with time use data, you can also get much more detailed information on several background characteristics in the 'expert modus'.

In case you would like to know more about the research and the website, you can find relevant information under the different menu buttons above. You can find information, amongst others, about the manual for the tables, the used questionnaire, the diaries, the variables, *et cetera*.

## 4.3 COLLOQUIUM

The colloquium will be organised, hosted and funded by the Institute for Analysis of Change in Contemporary and Historical Societies of the Université Catholique de Louvain, in collaboration with two research centres (CIRFASE & GIRSEF) and the Association Belge Francophone de Sociologie et d'Anthropologie (ABFSA), on March 3, 2016.

### 4.3.1 Introduction

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The LFS&TIME project funded by BELSPO in the frame of the BRAIN-Be research programme is a collaboration of VUB and UCL with the support of Statistics Belgium. The project aimed at merging Labour Force Survey (LFS) data, Time Use Survey (TUS) data and Work Grid (WG) data.

These different datasets allow different approaches to working times. For example, LFS contains the legal framework of employment, the WG contains the timing of work over a week and TUS contains the contextual information and information on the embeddedness of working times during the day.

In Belgium, unlike in other countries, these data are collected by statistics Belgium simultaneously within the same households (data for 2013). This offers 1) methodological possibilities to crosscheck the validity of data and 2) opens new perspectives to deepen the relation between time use and labour market position at household level. A combination of these data thus provides several strengths.

This new dataset has been produced by the team for the benefit of society; it will be made available through a web application for different kinds of users of socioeconomic data: general public, administrations, academics, students... Topics such as labour market inequalities between men and women, effective working hours, relations within the family and parenting models... can all be studied with this merged database.

This seminar focuses on presenting the database and the possible uses by various audiences, stressing the added value of merging these database both in terms of methodological consolidation of the databases and in terms of the vast array of topics that can be explored by using this merged database. Results from a series of specific analyses will be presented as an illustration: time pressure, homework and flexibility.

### 4.3.2 Program

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The program outline is as follows:

9:00-9:10	Welcome – Bernard Fusulier (UCL) and Ignace Glorieux (VUB)
9:10-9:30	Introduction – Aziz NAJI (Belspo) and Theun Pieter van Tienoven (VUB)
9:30-10:00	The LFS and Time Database – Theun Pieter van Tienoven (VUB)
10:00-10:30	The Webtool and Interface – Joeri Minnen (VUB)
10:30-11:00	Coffee Break
11:00-12:00	Case study 1: Being rushed and time pressure – Antoine Delporte (UCL)

12:00-12:30	Case study 2: Supervision of homework – Antoine Delporte (UCL) Case study 3: Part-time and non-standard working time – Theun Pieter van Tienoven (VUB)
12:30-14:00	Lunchbreak
14:00-14:30	Working time estimates : Reliability and validity – Antoine Delporte (UCL) and Joeri Minnen (VUB)
14:30-15:15	Roundtable 1: Producers of labour and time use statistics Lydia Merckx (Statistics.be), Agnieszka Litwinska (EUROSTAT), Pia Rattenhuber (OECD)
15:15-15:30	Coffee Break
15:30-16:15	Roundtable 2: Users of statistics Jan Vanthuyne (Employment Belgium), Françoise Goffinet (Institute for the equality of women and men), Béatrice Van Haeperen (IWEPS)
16:15-17:00	<b>Conference: Time use and social inequalities – Laurent Lesnard (SciencesPo Paris)</b>