



# *time-pieces*

news on time use research in the  
electronic **International Journal of Time Use Research**

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## **New developments in time technology – projects, data, computing and services**

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### **CHAD EXPLORER – AN ENHANCED WEB APPLICATION FOR CHAD**

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In 1999 the US Environmental Protection Agency (EPA) developed a Consolidated Human Activity Database (CHAD). CHAD has been used for various exposure modeling studies (McCurdy et al., 2000, Graham & McCurdy, 2004; McCurdy & Graham, 2003). Recently, CHAD has been improved and enhanced with a new web application called CHAD Explorer (CHAD-Ex).

CHAD Explorer (CHAD-Ex) consists of 24 h diaries for almost 35,000 U.S. citizens. These diaries are associated with location and activity codes (Robinson et al., 1989, (McCurdy & Graham, 2003). The studies included in CHAD-Ex are listed in Table 1. The diaries come from national and state-level random probability studies. The data were acquired between 1983 and 2008. About half of information is cross-sectional in nature, having one diary day of time use information per person, while the other half has between 2-369 days of data per person. CHAD and CHAD-Ex both can be found at the same web site ([www.epa.gov/chadnet1](http://www.epa.gov/chadnet1))

#### *Specifics about CHAD Explorer (CHAD-Ex)*

CHAD-Ex takes advantage of the Oracle Application Express™ (OAE) as an integrated development environment for developing a database-driven web application which provides various ways for browsing and querying the sequential 24-h U.S. time use data contained in CHAD.

**Table 1**  
**Summary of the CHAD database**

Study name	Year (last if multi- years)	Person- days of diaries	Number of days of data per person		Sponsor
			Range of diary days	Median	
Denver MSA	1983	805	1	1	EPA
Washington DC MSA	1983	699	1	1	EPA
Cincinnati MSA	1986	2,614	1-3	3	EPRI
California - adolescents	1988	183	1	1	CARB
California - adults	1988	1,579	1	1	CARB
Los Angeles - elementary	1989	51	3	3	API
Los Angeles - high school	1990	43	2-3	3	API
California - children	1990	1,200	1	1	CARB
Valdez AK	1991	397	1	1	Oil companies
NHAPS - A	1994	4,723	1	1	EPA
NHAPS - B	1994	4,663	1	1	EPA
PSID (CDS) 1	1997	5,616	1-2	2	NICHHD
Baltimore elderly	1998	391	1-24	14	EPA
EPA #1*	2000	367	367	367	EPA
RTP Unhealthy	2001	1,000	8-33	32	EPA
Seattle MSA*	2002	1,693	5-10	10	EPA
EPA #2*	2002	197	197	197	EPA
PSID (CDS) 2	2003	4,782	1-2	2	NICHHD
RTI Averting behavior*	2003	2,907	1-6	4	EPA
Internal EPA*	2007	432	35-69	54	EPA
EPA #1*	2007	369	369	369	EPA
Mother & child*	2008	62	31	31	EPA
PSID (CDS) 3					
Totals		34,773			

Notes and abbreviations: \*Added to CHAD via CHAD Explorer; # Number (of days);  
 API = American Petroleum Institute; CARB = California Air Resources Board;  
 CDS = Child Development Supplement; EPA = Environmental Protection Agency;  
 MSA = Metropolitan Statistical Area; NHAPS = National Human Activity Pattern Survey  
 (A=air version; B=water version); NICHHD = National Institute of Child Health and  
 Human Development; PSID = Population Study of Income Dynamics;  
 RTI = Research Triangle Institute; RTP = Research Triangle Park  
 Source: own calculations.

CHAD-Ex optimizes the relational database for efficient storage of CHAD data by organizing time-activity data into respective hierarchies and associating detailed diary with clearly defined location and activity codes.

CHAD-Ex provides a user-friendly and logical graphical user interface (GUI) that facilitates intuitive exploration of the time-activity data. It operates in a tab-list fashion that supports two ways of browsing the data: “flat-view” and “drill-down”.

The GUI of CHAD-Ex allows dynamic query of different aspects of CHAD data according to the criteria set up on the fly. It also allows sequential presentation of detailed information on the found items which are hierarchically stored and linked.

CHAD-Ex provides instant saving of explored data set and also gives options for file transfer such as download or upload.

Furthermore CHAD-Ex provides a help module for convenient presentation of answers to frequently asked questions (FAQs), listing the names of data tables and column headings, as well as various codes used for classification of data. It provides a feedback interface to facilitate the exchange of comments and ideas.

#### *Strength and application future of CHAD-Ex*

CHAD-Ex organizes various time-activity data into different hierarchies. Thus, it allows easy and efficient query of information with dynamically set criteria. It also fosters statistical analyses on the data.

A particular strength of CHAD-Ex is its capability for effective storing and presenting longitudinal time-activity data. This feature may be very helpful for accomplishing exposure modeling studies designed for maintaining proper intra- and inter-individual correlations (Glen et al., 2008). Such studies are extremely useful for understanding the relationship between intra-individual variability and inter-individual variability in exposure analyses (Frazier et al., 2008; Isaacs et al., 2008, 2012; Xue et al., 2006).

CHAD-Ex is similar to the “harmonized” American Heritage Time Use Data (AHTUD; see Merz and Stolze, 2008), with which it shares a number of studies (George and McCurdy, 2011). CHAD-Ex may be more useful for exposure studies which assemble demographic cohorts to specific metropolitan area and then use conditional probability distribution to assign diary days of time use data to each modelled individual in these cohorts (Burke et al., 2001; Xue et al., 2006).

#### *Summary*

CHAD-Ex makes it easier for time use researchers to explore time-activity data stored in CHAD. It also facilitates the easy incorporation of new human activity data into CHAD. The powerful but yet flexible database structure of CHAD-Ex may point a way for evolving CHAD into a multi-national time use database and thus serving the global exposure research communities even better.

### Disclaimer

This paper has been reviewed in accordance with EPA's internal procedures, and has been approved for publication. Mention of trade names or other commercial products does not constitute endorsement of their use by EPA.

### Conflict of interest

The authors declare no conflict of interest. Staff of the U.S. Environmental Protection Agency developed CHAD Explorer (CHAD-Ex) using taxpayer-provided funds from the Agency's general research budget.

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## **A REVIEW OF PAKISTAN'S NATIONAL TIME USE SURVEY 2007**

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This paper aims to highlight the salient features of Pakistan's first and only National Time Use Survey 2007 and the current issues that limit the utility this unique dataset. The Time Use Survey (TUS) was carried out by the Federal Board of Statistics Pakistan (FBS) with the aim to quantify the gendered distribution of productive time use and unpaid work in order to help draw women responsive policies, welfare programs and budgeting (FBS, 2008).

The survey is a national and provincial representative of the country at urban at rural levels. It excludes nearly 2 percent population in some specific areas due to time, access or security limitations. The survey provided a unique country wide dataset which is freely accessible and provides vast opportunities to the researchers, practitioners and professionals across the world. TUS data can be divided into two distinct segments, household segment and the individual time use diary segment.

The household segment enlists useful data regarding housing detail (e.g. tenure, access to public schools, healthcare, energy sources, public transport facilities) and socioeconomic status (e.g. household size, age, gender and rank of members, income level and sources, items of use, ICT and vehicle ownership).

The time diary segment enlists individual's socioeconomic details (e.g. skills, workforce participation, details about the nature of employment and enterprise, monthly income and sources etc.) and the past day's activity details from 4:00 am to 4:00 am.

Three main activities were listed for each of the forty eight 30 minute time slots in the diary through open ended questions. If the respondent reported more than one activity in 30 minute interval, the question was asked whether the activities were carried out successively or simultaneously. Later for analysis purpose, the activities were grouped into 123 detailed and 10 broad activity categories. An important component of diary segment 'Location Code 1 and 2' provides exclusive description of the human activity space. 'Location Code 1' identifies the broad facility / land use of activity duration while 'Location Code 2' is a description of the physical space (inside or outside) and specifically inquires about the mode of travel during activity, if any.

### *Sampling and data collection*

Pakistan's total populations roughly comprise 60 percent rural and 40 percent residents. Both urban and rural people have been given equal representation in the survey according to their share in national population. Thus, from the sample size of 19600, nearly sixty percent (11706) were surveyed from rural households and remaining forty percent respondents (7660) were surveyed from the urban households. A routine three stage sampling procedure was applied to rep-

resent the data at provincial level. In this process, the whole country was divided into 1388 Primary Sampling Units (PSUs). Selection of survey sample from the PSUs is based on probability proportional to size method where a PSU with higher population size had the higher chances of selection for survey participant identification. Then PSUs are subdivided into Enumeration Blocks (EB) by lower, middle and upper income areas each with nearly 250 houses.

At the third stage, selection of households from EB is done with equal probability through systematic sampling with a random start. Every 16<sup>th</sup> house is selected from urban and 12 households from rural EB. Same procedure is use for Labor Force Surveys, national census, elections and administrative tasks. The next additional step specific to TUS selected individuals for time use diary measurements from survey households. For this, the respondents were selected systematically through a selection table based on the age rank of household members. Using this selection table, younger members of household have slightly higher chances of participation. The reason behind it may be the higher participation of younger members in economic activities.

Household section information was asked from adult member of the household whereas the time use diary was surveyed from two respondents above 10 years of age from each household. The possible reason behind surveying younger population is to assess the prevailing practices of child labor and other socio cultural issues which reduce the female's response rate. FBS hired 120 field staff mostly comprising local female surveyors for the survey who sometimes made multiple visits to the houses accompanied by local political leaders. Since this was the first ever time use survey in the county, staff were trained before survey regarding the basic concepts, survey techniques, recording and coding of time based activities in the diary segment.

The data has been collected from face to face questionnaire interviews during the whole year throughout the weekdays and weekends. Generally, each day of the week carries 14 - 16 % of the survey questionnaires, but for Saturday, a relatively lesser nearly questionnaires (9 %) were filled due to the reason that it is a half working day in country and the past day for which information was asked, the Friday, is usually a full holiday for labor and farmers rather. After data collection, the filled questionnaires were digitized, check for consistency or referred back to field in case of inconsistency of information.

#### *Methodological issues and challenges*

A description of issues and challenges to the TUS's utilization in the country are given below whose redressing may increase its utility in future:

- There are some limitations in the activity classification for travel related analysis. For example, travel has been more thoroughly elaborated for the 'care' activity where the travel component has three specific activities as compared to only one travel activity in other activity lists which deserve a similar elaborative division. At the same time, the division of travel component under separate waiting or travelling answers is encouraged as it may tell

the actual waiting time which is useful for public transportation planning and efficiency assessment.

- ‘With whom’ activity detail is an increasingly popular and highly recommended component for time use surveys (Harvey and Spinney, 2012), however this information is not included in the activity diary questionnaire. I would argue in favor of using this information as it can provide useful insights into the mobility of dependent population like female, elderly and children. Since the country aims to evaluate the women’s role in economic participation this activity will enable finding the real situation whether female are individual travelers to the work site or they tend to use an accompanying person for their mobility.
- The survey data does not describe any information regarding harmonization and correction of dataset for various anomalies of time use which may be provided as ancillary information with the dataset.
- Time use data collection and analysis is relatively new and novice technique in Pakistan. Only a handful of institutions, if any, educate their students about theoretical utility or practical collection and application of time diaries. Although creating summaries and descriptive statistics can be an easy task, advanced technique like survival analysis and hazard modeling is rarely used by researchers and professionals. There is a need to train government departments; university faculty and private professionals for increased use of freely available TUS information pool.
- The data has been made available in STATA file which is relatively lesser utilized software in the country. Few universities in Pakistan own or use the Stata as they are more accustomed to SPSS or other spreadsheet programs, thus a few students and researchers are able to explore large sized .dta file without SPSS.

#### *Conclusion and recommendation*

TUS 2007 is the first national time use survey account for Pakistan which has enabled a unique data source on gendered pattern in time use activities in the country. It gives an exhaustive level of details of vital activities like work, education, healthcare and media use. Since the data is available for free download for general public (GoP, 2012), it carries huge potential for measuring the patterns of activities across various social and economic disciplines. Although further improvements are needed in questionnaire contents in the measurement of household resources, activity description and provision of ancillary metadata with the main data file; it remains a useful data source for researchers and students alike.

The incorporation of a “for whom” component in activity classification can help better understand the dimensions of female economic productivity and unpaid labor contribution. The second occurrence of survey is not clear so far, it is important that the country keeps building on this information resource and its utilization consistently. Since a number of Asian countries are participating in time use surveys, the data can be useful for international comparison especially across Asian countries (Fisher, 2006, Bittman et al., 2004).

There is a need for organizing and harmonizing the data set with European and MTUS datasets for enhanced utility which would not only benefit to the country but also to the research across the world (Fisher et al., 2000).

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## THE TIME USE DATA ACCESS SYSTEM – THE NEXT PHASE OF THE AMERICAN TIME USE SURVEY DATA EXTRACT BUILDER (ATUS-X)

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The American Time Use Survey (ATUS) is an ongoing time diary survey funded by the United States Bureau of Labor Statistics and fielded by the United States Census Bureau. Data collection began with some 20,000 interviews in 2003 and 14,000 responses have been collected each subsequent year. ATUS respondents are a nationally representative sample of persons aged 15 and older drawn from households who have concluded their participation in the Current Population Survey (CPS), the monthly labor force survey in the United States. For each activity during the day covered by the ATUS interview, respondents are asked what they were doing, where they were, and who was with them. Background information about the ATUS respondents and their households is collected as part of the ATUS interview. The ATUS public use files also include information collected during the household's final CPS interview. The survey is designed to permit the addition of modules on specific topics, such as the 2006-2008 Eating and Health Modules sponsored by the Economic Research Service of the United States De-



partment of Agriculture, the 2010 Well-Being Module sponsored by the National Institute on Aging, and the 2011 Leave Module sponsored by the U.S. Department of Labor Women's Bureau.

The American Time Use Survey Data Extract Builder (ATUS-X) gives users easy access to American Time Use Survey (ATUS) data through an online data access system ([www.atusdata.org](http://www.atusdata.org)). The ATUS public use files are challenging for researchers to use, requiring a substantial initial investment before analysis can begin. By facilitating the creation of data files that are ready for analysis, ATUS-X is encouraging increased use of the ATUS data to address a range of important social and policy topics. The ATUS-X has accumulated 1,200 registered users who have made over 3,800 data extracts, including nearly 38,000 time use variables in those extracts. We also estimate that over 130 articles, chapters, working papers, and conference presentations have used ATUS-X, and, because many authors do not inform us of their publications or explicitly cite the extract system, this figure is certainly an undercount.

Version 2.4 of the American Time Use Survey Data Extract Builder (ATUS-X) incorporated 2010 ATUS data, and during the winter of 2011 we added 2010 Well-Being module data to the system. Version 2.5 of the ATUS-X, released in July 2012, includes recently made public 2011 ATUS data. To date, data from 2003-2011 have been incorporated into the system as well as information from the ATUS supplementary modules on Well-Being and Eating and Health. Information on secondary eldercare from the 2011 ATUS has already been added to the system. The addition of the 2011 Leave Module is pending.

Files for ATUS data linked to CPS education, food security and volunteer supplement data are available through the ATUS-X web site. We have created weights to accompany linked ATUS/CPS supplement data. In the future, we plan to make linked data available via the extract system.

A competitive five-year renewal application for the Time Use Data Access System (TUDAS) was funded in August by the National Institute of Child Health and Human Development. This project is a collaboration of the University of Maryland (U.S.), the University of Minnesota (U.S.), and the Centre for Time Use Research (Oxford, U.K.). This new funding will extend our work for another five years and permit incorporating the American Heritage Time Use data sets and Multinational Time Use Survey data from several European countries. We expect these additions to dramatically increase both cross-temporal and cross-national analysis of time use data. In light of our recent success securing funding to extend and expand the ATUS-X database, we will be redesigning our data extraction system to accommodate the different data structures characterizing the additional samples.

How people use their time, why individuals allocate their time as they do, and what consequences flow from these time use decisions are fundamental to the health, quality of life and effective functioning of a society. The potential of time use data for unlocking the black box of household decision-making is just being realized. Continuing this project for another five years and adding historical U.S. and selected European samples to the database as well as new func-

tionality to the extraction system will facilitate research on parental time with children, how time use influences health, household responses to changing economic conditions, and cross-national research on health and well-being in different cultural and policy settings.

Funding for this project is provided under a grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, R01-HD053654. For more information visit [www.atusdata.org](http://www.atusdata.org) or contact us via email at [atusdata@umn.edu](mailto:atusdata@umn.edu) or [hofferth@umd.edu](mailto:hofferth@umd.edu).

## **NORDIC CONTACT NETWORK ON TIME USE SURVEYS**

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Nordic statistical institutes have established contact networks in different statistical domains for cooperation. Time Use Surveys also have their own contact group. Experiences gained from conducting Time Use Surveys are shared in the contact network. The Nordic countries take turns in acting as the chair for the network for a term of three years. Finland is currently the chair for the Time Use Surveys network. In recent years, the network has convened annually. The latest meeting was in Oslo, Norway in September 2012.

Time Use Surveys have been conducted in the Nordic countries for a long time. Denmark was the first Nordic country to make a Time Use Survey in 1964. It was carried out by the Danish National Centre for Social Research. The next country was Norway, where the local statistical institute conducted its first Time Use Survey in 1970-1971. The first survey by Statistics Finland in the autumn of 1979 was largely based on the Norwegian model (Niemi 2000). Statistics Sweden made its first Time Use Survey in 1990-1991. It was in turn largely based on the Finnish example. Since then, the surveys have been repeated in each of these countries at least twice, approximately every ten years. Iceland is the only Nordic country that has not yet carried out a Time Use Survey. They have discussed the possibility to start conducting the survey.

Due to their history, the Norwegian, Finnish and Swedish surveys are quite similar. The Danish surveys differ somewhat from these in terms of methodology. Norway, Finland and Sweden have used diaries into which the respondents write down what they have done in their own words, while in Denmark, the surveys (apart from the 2001 survey) have been based on pre-classified diaries.

Eurostat, the Statistical Office of the European Communities, compiled recommendations for a Harmonised European Time Use Survey, HETUS in 2000 (Eurostat 2004). The Nordic countries have applied these recommendations varyingly in the two latest surveys. Finland and Denmark have used household samples in accordance with the recommendation; Norway and Sweden have mainly continued using samples of individual persons. The age limits have also differed.

The latest Time Use Survey was conducted in Denmark in 2008-2009, in Finland in 2009-2010, and in Norway and Sweden in 2010-2011. The Danish survey was conducted by Rockwool Foundation; the surveys in the other Nordic countries were conducted by the country's statistical institute. The interviews were conducted mainly by telephone in Norway and Sweden, and by telephone and visits in Finland. In Denmark, the data were, apart from telephone interviews, also collected via the web. The Danish sample was partially a panel sample, and it included people that had participated in the 2001 and 1987 surveys. In addition to time use, the Danish survey also examined consumption.

In the Nordic contact group meetings, the main discussion topics have been how to maintain response activity, coding, the quality of the data, and reporting.

Denmark and Norway used monetary incentives to motivate participation. Sweden and Finland also closely monitored response rates during the fieldwork.

In Finland, coding and saving were combined. Word abbreviations were used as saveable codes for main and secondary activities. In Sweden, all diaries were scanned; an activity search application and an application for quality control were used in coding. Denmark used pre-coded diaries, so no coding stage was required.

The effect of the different data collection methods on response activity and the quality of the data has been studied in different countries (Bonke & Fallesen 2010; Okkonen 2012; Väisänen 2012). No differences in quality were detected in Finland between the diaries that had been guided during visits or over the telephone. In Denmark, the quality of web diaries was better than that of telephone interviews.

Norway, Sweden and Finland included a question at the end of the diary concerning the pleasantness of the activities. In Norway and Sweden, the questions covered both the most and least pleasant activity, in Finland only the most pleasant activity.

A weekly diary concerning paid work included in the Eurostat recommendations was only used in Finland.

A pre-coded so-called light diary was also tested in Finland and Sweden during the collection of the actual diary, in order to compare whether different diaries produce similar results concerning the population's time use.

All three Nordic countries have already reported their main results. Finland's report was published in Finnish in 2011 and in English in 2012 (Pääkkönen and Hanifi 2012). Norway's (Vaage 2012), Sweden's (SCB 2012) and Denmark's (Bonke 2012) reports were published in 2012. Statistics Finland's Welfare Review and Norway's statistical institute's Samfunnsspeilet magazine published extensive special issues concerning time use in the autumn of 2012.

In addition, articles have been compiled concerning the results from different countries and they have been presented, for instance, in IATUR conferences. You can also find online tables concerning time use on the websites of Finland's, Norway's and Sweden's statistical institutes.

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## **Book notes**

by Kimberly Fisher

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**Cain L. P. and D. G. Paterson (eds.)**  
**The children of eve – Health and well-being in history (2012)**

*Publisher:* Wiley-Blackwell

*ISBN:* 978-1-4443-3689-4

*Website:*

<http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1444336894,descCd-authorInfo.html>

*Languages Available:* English

This book undertakes a long-term look at the social, demographic and economic factors which underlie the present trends affecting population well-being. The opening chapters adopt a long-term historical perspective. The time use discussion emerges in the later chapters 7 (the changing family), 8 (health and well-being), and particularly 9 (macroeconomic effects of the industrial transition). Chapter 9 uses Multinational Time Use Study data to explore work-life balance issues and time in domestic work.

**Cyrino, R. and P. Dias (eds.)**  
**Mulheres executivas – A divisao do trabalho domestico a luz dos estereotipos (2012)**

*Publisher:* Fino Traço Editora

*ISBN:* 978 8580 540697

*Website:*

<http://www.finotracoeditora.com.br/livros/CYR001/9788580540697/mulheres-executivas-a-divisao-do-trabalho-domestico-a-luz-dos-estereotipos.html>

*Languages Available:* Portuguese

This book contains core research from a PhD thesis examining gender relations in households of women who work in senior management and high-status professional jobs. The author demonstrates that even women who hold significant power in the job market nevertheless perform a disproportionate share of unpaid domestic work.

**Duhigg, C. (ed.)**  
**The power of habit – Why we do what we do and how to change (2012)**

*Publisher:* William Heinemann

*ISBN:* 978-0434020362

*Languages Available:* English

The author uses his experience as a journalist to present research into the neurological and psychological understandings of the processes by which people learn, develop

and change their habits. While the author does not make much direct use of time use data, and while this book aims to help readers to amend their routines to achieve goals, the book does offer insight into the factors shaping daily behaviours.

**Inbakaran C. and M-L. Van Der Klooster (eds.)**

**2011 Time use in Australia, United States and Canada (2012)**

*Contributing Authors:* Mareggi, M., Harvey, A. S., Spinney, J., Robinson, J. P., Godbey, G., Giannelli, G. C., Mangiavacchi, L., Piccoli, L., Brzozowski, J-A., Martino, A. E., Vitartas, P., Ellwood, M., Wolfteich, C. E., Sanchis, R. G., Francavilla, F., Grotkowska, G. and M. Socha

*Publisher:* Deakin University  
*ISBN:* 978-1906040895  
*Languages Available:* English

This short book offers brief summaries of a number of contemporary time use research projects in Australia, Canada, Ecuador, Italy, Poland, Spain, and the United States of America. Many of the pieces raise methodological challenges: how we measure urban behaviour in the context of spaces in which behaviour takes place; how we code activities transcending the boundaries between paid and unpaid work or between secular and sacred domains; how we best measure sports participation, adult care or the emotions associated with activities; how we include measure of unpaid work in national accounts; how we identify the impact of communication technologies on daily behaviour.

**Lelord F. (ed.)**

**Hector finds time (2012)**

*Publisher:* Gallic Books  
*ISBN:* 978-1906040895  
*Languages Available:* English

This popular literature book offers an English translation of the original 2006 French book *Le Nouveau Voyage d'Hector : A la Poursuite du Temps Qui Passe*, a story about a psychiatrist dealing with concerns about his time while listening to patients with time-related concerns of their own. While this is not an academic text, the book explores issues related to lived time use patterns, and thus may offer engaging leisure reading for time use researchers.

**Mückenberger, U. (ed.)**

**Lebensqualität durch Zeitpolitik – Wie Zeitkonflikte gelöst werden können (2012)**

*Publisher:* Hans-Böckler-Stiftung, Edition Sigma  
*ISBN:* 978-3-8360-8742-1  
*Languages Available:* German

This book explores how time use features in industrial conflicts, making a particular contribution to the literature by contrasting the time-related issues for employers, employees, and other parties affected by labour disputes. Mückenberger uses both theoretical discussion and empirical evidence to demonstrate the contribution of time use patterns to the quality of life experienced by working people. He then sets out strategies by which the time and efficiency needs of companies can be reconciled with the time

balance needs of employees, creating win-win scenarios for all parties in labour disputes over time-related issues.

**McDonald, P. and E. Jeanes (eds.)  
Men, wage, work and family (2012)**

*Contributing Authors:* Brown, P. and H. Perkins

*Publisher:* Routledge

*ISBN:* 978-0415893763

*Website:*

<http://www.routledge.com/books/details/9780415893763/>

*Languages Available:* English

This book explores a range of issues arising for working men in a range of countries in relation to balancing employment and home commitments. The majority of chapters deal with a range of issues relevant to the time use research community in a general way. One chapter by Peter Brown and Helen Perkins, "Happiness Under Pressure: The Importance of Leisure Time Among Fathers in Dual Earner Households," uses experience sampling and qualitative interview time use data, to examine work and family life conflicts experienced by Australian fathers.

**Höjer, M., Gullberg, A. and R. Pettersson (eds.)**

**Images of the future city – Time and space for sustainable development (2011)**

*Publisher:* Springer

*ISBN:* 978-9400706521

*Website:*

[http://www.ebook3000.com/Images-of-the-Future-City--Time-and-Space-For-Sustainable-Development\\_123416.html](http://www.ebook3000.com/Images-of-the-Future-City--Time-and-Space-For-Sustainable-Development_123416.html)

*Languages Available:* English

This book draws on a variety of data to project what life in Stockholm, Sweden, might be like if lifestyles shifted to use substantially fewer resources to reduce the impact of human behaviour on climate change. The authors consider patterns of eating, housework and domestic production, paid work, transport, and other patterns of time use as a central issue in their analysis.

**World development report 2012 – Gender equality and development (2011)**

*Contributing Authors:* Revenga, A., Shetty, S., Benveniste, L., Coudouel, A., Das, J., Goldstein, M., Muñoz Boudet, A. M. and C. Sánchez-Páramo

*Publisher:* World Bank

*Website:*

<http://go.worldbank.org/CQCTMSFI40>

*Languages Available:* Available: Arabic, Chinese, English, French, Portuguese, Russian, Spanish

This report maps changes in gender relations across the world with an aim to documenting the extent and modes of manifestation of gender inequality as well as provid-

ing data to monitor gender equality as a means to improving development and quality of life around the globe. Time use information appears sporadically throughout the report in sections covering paid work, total work, the contribution of unpaid domestic production to national and the global economy, and parenting styles and childcare.

*time-pieces*