

Time and the Socioeconomic Atom

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Abstract

Time is the essence of human experience. Time use statistics can be used to illuminate a wide range of public policy issues. But the survey materials on which these statistics are based are not widely available, nor are they well known to social statisticians. This lecture discusses a series of examples, some more and some less familiar, of the use of time diary materials, in the context of various labour supply, transport, childcare, national accounting, and other applications.

1. “Activities” and the Use of Time

The atomic particle, in the social world, is the *activity*. An activity is an event or episode, with a finite duration, that has an explicit meaning or purpose and this meaning and purpose is readily understandable (at least by people in our own society). We wash dishes, we travel to work, we watch a television programme. These are *activities*.

Each activity is made up of other actions. “Washing dishes” involves filling a bowl with warm water, putting dishes into the water, and so on. But these component actions are – to continue the analogy – the subatomic particles, and they are given a meaning by the short-term purpose of the activity as a whole. We switch on the engine of the car as part of the trip to work, and when we are asked what we have done today, we talk about the drive to the workplace, and not the turning of the key in the ignition.

It is the sequence of these activities, through the day, through the week, that constitutes our “time budgets”. In this lecture I will demonstrate how it is possible to use appropriately constructed samples of narratives of our activity sequences through our days – samples known as time diary or time budget surveys – as the basis for the construction of a peculiarly comprehensive form of socioeconomic accounts. For more than a century, **expenditure** diary samples have been a central part of the armoury of

empirical economists. My contention is that **time** diary samples are potentially of similar importance.

In what follows I am going to take just half a dozen examples, starting quite small, with the measurement of the extent of single and apparently simple activities such as childcare or travel, and then move on to discuss much larger issues of social accounting and the changing balances of a society's time allocation as a whole.

2. A Thought Experiment – Stylised Estimates and Diaries

But first let me invite you to participate briefly in a thought experiment. Let me ask you to think, for a moment or two, about how you spend your time. Over the last week, how many minutes have you spent in paid work? Domestic work? Watching television? In fact, I should immediately say that I do not really want the actual answers, but rather, that you should note whether or not you could answer the questions **at all**.

My hypothesis is that there are just a few circumstances in which you will be able to answer the questions quite straightforwardly. First, is it the case that you just did not participate in the activity? The answer to my question in this case is straightforwardly zero. A few people have to keep a continuous record of their paid work time for accounting purposes. But, these two special cases apart, by my hypothesis, the answer is mostly that you just *don't know*. The total amount of time devoted to particular categories of activity is not something that anyone really *needs* to know about themselves – it is just not a natural category of self-knowledge. If you are asked, you can with some difficulty, and subject to quite a lot of error, work it out. You have to scan through the week in your mind, identify each relevant episode, work out its duration, and then go on to the next episode. It involves lots of difficult mental arithmetic, requires all sorts of problematical judgements about what is included in and excluded from the activity you're trying to estimate, and the effort of recalling whether the episodes were indeed within the last week. What you end up with, are at best “stylised estimates” – more or less conventional statements about how much time you *think* you spend in various activities. We know that these sorts of estimates are in general wrong because when you ask such questions about a comprehensive *set* of activities, the estimates tend to a total of 26 or 28 hours per day!

Contrast this with the diary method. You have an interviewer who asks you to explain, in your own words, what you did yesterday, starting from,

say 4 a.m., requesting information on each successive episode. You woke up at such a time, dressed, cooked breakfast at such a time, going through each episode consecutively, trying to leave no gaps, but perhaps sometimes dodging backwards and forwards as a subsequent activity prompts the memory of a previous activity that you had forgotten. What were you doing? What did you do next? This is a natural mode of reconstruction of yesterday's activities using each successive activity as a cue to the memory of the one that followed. Out of this sort of questioning emerges a detailed and continuous narrative of the stream of daily activities from which time estimates, and we will see much else, can be derived.

There are other things we may want to know. Was the respondent doing anything else at the same time as her or his main activity? Where does the activity take place? With whom? There is an almost infinite range of possible combinations of descriptive dimensions, diary lengths, sample designs. We classify these in terms of the degree of respondent burden. There is a continuum, from a "light" diary with a relatively small number of pre-coded activities, and respondents are just required to complete a time line through a single day. An example is given in Figure 1.

Figure 1: Example of a “Light” Diary

		EXAMPLE						Friday, 24 January	
	Activity		Night			Day			
			4am	5am	6am	7am	8am		
1	Sleeping, resting	1	—	—	—	—	—	—	
2	Washing, dressing	2				—	—	—	
3	Eating at home	3				—	—	—	
4	Cooking, food preparation	4					—	—	
5	Care of own children or other adults in own home	5							
6	Cleaning/tyding house, clothes washing/ironing/sewing etc.	6							
7	Maintenance, odd jobs, DIY, gardening, pet care	7							
8	Travel to and from work, shops, school, cinema, station etc.	8							
9	Paid work at work place	9							
10	Paid work at home (not using a Computer)	10							
11	Study at home (not using a Computer)	11							
12	Courses and education outside home	12							
13	Voluntary work, church, helping people (not in own home)	13							
14	Shopping, appointments (hairdressers/doctors/etc.)	14							
15	Going to concerts, theatre, cinema, clubs, sporting events	15							
16	Walks, outings etc.	16							
17	Eating out, drinking (pubs, restaurants)	17							
18	Visiting or meeting friends or relatives	18							
19	Sports participation, keeping fit	19							
20	Hobbies, games, musical instruments	20							
21	Watching TV/Cable/Satellite TV	21							
22	Watching videos/laser disks	22							
23	Listening to radio, CD, cassette	22							
24	Reading newspapers, books, magazines	24							
25	Being visited by friends or relatives in own home	25							
26	Receiving telephone calls	26							
27	Making telephone calls	27							
28	Personal Computer – games/games console	28							
29	Personal Computer – email (writing, reading or sending)	29							
30	Personal Computer – browsing the www/internet	30							
31	Personal Computer – study at home	31							
32	Personal Computer – paid work done at home	32							
33	Personal Computer – other	33							
34	Doing nothing (may include illness)	34							
35	Other (PLEASE WRITE IN)	35							
			4am	5am	6am	7am	8am		

At the other extreme, a “heavy” diary with multiple days of recording, with requirement for own words descriptions of primary and all secondary activities, and other descriptive dimensions, looks like this.

Figure 2: Example of a “Heavy” Diary

	What were you doing?	What else were you doing?	Where were you?	Who were you with?			
				Spouse	Own child(ren)	Other h'hold member	Other non- h'h member
7.00-7.10	Sleeping						
7.10-7.20	▼						
7.20-7.30	Had a shower		At home				
7.30-7.40	Made breakfast				▲		▲
7.40-7.50	Ate breakfast	Read newspaper	↓		▲		▲
7.50-8.00	Did washing up		↓				↓
8.00-8.10	Got my son dressed	Talked with my son			↓		
8.10-8.20	Walked to school with son	↓	Walking				
8.20-8.30	Dropped son off at school	↓	↓				
8.30-8.40	Walked to bus stop				▲		
8.40-8.50	Travel by bus to work	Read newspaper	On the bus		▲		
8.50-9.00	↓	↓	↓				
9.00-9.10							
9.10-9.20	Walked from bus stop to main job		Walking		↓		
9.20-9.30	↓		↓				
9.30-9.40							
9.40-9.50	Main job						
9.50-10.00	↓						

3. Sequence Analysis and Individual Time Budgets

So, once we have our random sample of diaries representing the society's days throughout the year, what can we do with them?

Quite the simplest thing is to look at the distribution of activities at different clock-times through the day. What are employed women, for example, doing at 7.30 a.m. or midday, or nine in the evening? Diaries are ideal for the study of the temporal organisation of service provision, but I shall not pursue this here. Rather, in this talk, I am going to concentrate on more aggregated applications of the data, of which altogether the most familiar is to add up the sequence of primary activities (ignoring simultaneous activities for the moment) so as to get a picture of the balance in time devoted to particular activities throughout the day.

Table 1: The Activities of the Day: UK Adults

ONS Omnibus Diary Module, May 1999

<i>(Minutes per day)</i>	
Sleep, personal care	555
Eating at home	61
Housework, childcare, shop etc.	205
Paid work, study etc.	188
TV, radio	167
Reading, hobbies, doing nothing	59
Visiting, socialising	68
Eating out, cinema, "outings"	53
Playing sport	12
All travel	71
Total	1,440

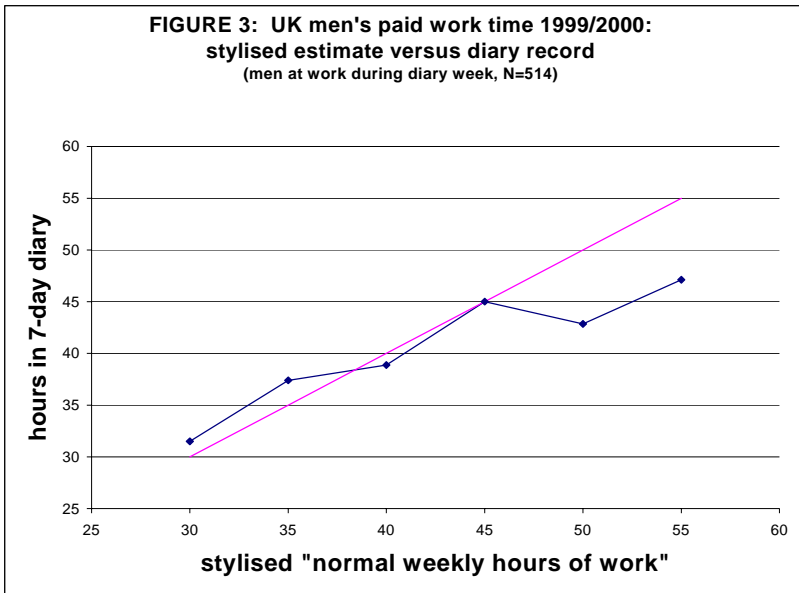
Table 1 is constructed from the very simplest sort of "time budget" survey – very like the "light" diary example in Figure 1. It was attached to the UK Office of National Statistics Omnibus Survey, the module took an average of 8 minutes to administer, and it cost around £30k to collect the 2000 days of data on which Table 1 is based.

Here I have reduced the 35 pre-coded categories to just ten, so as to give a flavour of what emerges. We see in the adult population, just over nine hours of sleep and personal care per day. Three hours paid work, two and three-quarter hours of television viewing. It provides evidence about

some things – for example the two and a half hours of domestic work – that are simply not observed in any other sort of statistical source. The coverage of the activities is *comprehensive*. In principle, all the different sorts of activities undertaken during May 1999 by the population from which the sample is drawn – all the production, all the consumption – are included in this one statistical source, and represented in this one table. And in addition to representativeness and inclusivity, even a light diary provides the opportunity for considerable detailed investigations. For example: what time do people devote to the use of the world-wide-web at home? How much do they spend in sociable activities with their friends? Or to put these questions together: is it *in fact* the case (as was recently alleged) that people who spend more time on the web are as a result less sociable?

I will concentrate for a moment on paid work time. In fact it is arguable that the picture of paid work emerging from general-purpose time diaries is better than that emerging from the stylised estimate approach used in conventional specialised Labour Force Surveys.

Figure 3 comes from a “medium” diary study, designed like the light diary, but running for seven consecutive days. The figure looks just at the men in the sample who did some paid work during the diary week, and plots the answers to “stylised estimate” questions from a questionnaire against the same respondents’ records of the actual time in paid work from their diaries. If the stylised estimate evidence corresponds to the diary totals, the plot should lie along the 45° line. Looking along the stylised response axis, up to 45 hours per week, the diary record corresponds pretty well. But above 45 hours the stylised responses are considerably higher than the work times recoded in the diaries. I just produced this result from the British Telecom-funded diary study I happened to be working on last week – but exactly the same result emerges from every single study, from any of at least a dozen countries.



Remember, the diary result comes from the sequential representation of the day, where no special emphasis has been given to any particular activity. From the point of view of the individual respondent, each of the activities – travel, TV, eating out and so on – is just as important as paid work. And the total of work time is calculated by adding together a number of separate work episodes. This result is certainly not a consequence of the regression of an extreme value towards a mean.

Instead, the explanation seems to be an entirely understandable systematic error, related to the way that the rest of life is integrated with paid work time. If you are working a regular and relatively short week, of, say, 36 hours, then it's normally possible to fit in the other things, shopping, collecting the car from the garage, and so on, outside normal work hours. But the longer your normal work hours, the more likely it is that the hours of availability of the services you want to consume, lie entirely within the limits of your normal work time. So, people who normally work 8 a.m. to 6 p.m. shifts, are more likely to go shopping, make hospital visits or whatever, during their normal work times, than are people who work 10 until 4. The stylised estimate is a sort of idealisation of the normal work time – if you work 9.15 to 4.30, five days a week, you are

likely to calculate your work time as “five times seven and a quarter equals 36 and a bit hours”, and if you do all your shopping and deliveries and exercise and medical care and personal grooming outside this time, then the stylised estimate is a good one. If on the other hand, you “normally” work from 8 a.m. until 7 p.m. five days a week, and you claim, as many in the UK do, a 55-hour work week...well I *know*, from looking at these diaries, that this includes quite a lot of interstitial non-work activity! No one is telling lies here; it’s just that these non-work activities in the interstices of a work period are not particularly important; they are just not salient when we are asked the stylised questions about our work time. By contrast, when someone asks us about what we did yesterday, then the work and the shopping have equal salience, and the sequential nature of the questioning provides a natural cue to remind us that the normal work schedule was interrupted.

My second example concerns the 71 minutes per day of travel time we saw in Table 1. Those responsible for transport policy are concerned with much more detailed questions than the total of work time. How many distinct trips? By which transport modes and by which sorts of people? When during the day? What are the purposes of the trips?

The conventional way of answering these questions is with a special sort of “discontinuous” diary study in which respondents list each out-of-home travel episode. The UK National Travel Survey costs around a million pounds per year. But it turns out that much of the required information can be drawn straightforwardly from a simple general-purpose time diary survey. Let us just take the example of *trip purpose*. This is what the UK National Travel Survey tells us about the distribution of travel time by trip purposes in the UK in 1999.

Table 2: Travel by Purpose, UK 1999/2000

Mins/day	NTS 1999
Work-related	19
Shopping	15
Education + related escort	3
Other escort	3
Other personal business	5
Visit friends at private home	8
Sport/entertainment/with friends	6
Holiday/day trip/walk/other	9
Total	69

The simple diary provides equivalent information in its continuous narrative of the sequence of daily events. The transport episodes are interspersed between other activities, and we can use this context information as a basis for inferring the trip purpose. We apply two utterly simple rules. Rule 1: classify the transport purpose by the nature of the immediately **subsequent** activity **unless** the following activity takes place at home. Rule 2: **if** the following activity takes place at home, classify the trip purpose by the immediately **previous** activity. Apply these rules, and Table 3 is what emerges.

Table 3: Travel by Purpose, UK 1999/2000

Mins/day	NTS 1999	ONS Omnibus Diary module May 1999
Work-related	19	18
Shopping	15	14
Education + related escort	3	4
Other escort	3	3
Other personal business	5	1
Visit friends at private home	8	9
Sport/entertainment/with friends	6	11
Holiday/day trip/walk/other	9	11
Total	69	71

These numbers emerging from the light diary study are startlingly similar to those coming from the National Travel Survey (NTS). And remember, the cost of the light diary is a fraction of that of the NTS.

I should immediately say that I do not think either of these surveys is giving us quite the right answer. Remember that the omnibus module has pre-coded activity categories and 15 minute recall intervals. A full scale heavy diary survey is likely to provide five or so minutes of extra interstitial travel activity such as “just popped down to the shops”, or “walked round the block to clear my head”, cued by the “who with?” and “where?” columns. These interstitial events are disproportionately likely to be forgotten in a standard travel survey, which simply asks respondents to list all travel episodes. They are more likely to appear in a detailed continuous time diary survey that provides natural cues and prompts to elicit recall of short inconsequential events.

Now of course a heavy diary is much more expensive than the sort of light time-use module whose results we’ve been discussing so far. A heavy diary has the same order of cost as the NTS. **But** for that expenditure, we get a superior version of the travel information, and **also** the paid work time estimates, and the information on unpaid work, and consumption time, and on patterns of sociability and childcare and so on – in addition, and for free!

My third example concerns the difficult issue of accounting for multiple simultaneous activities. This issue is particularly pressing in relation to

childcare activities, which are frequently undertaken in parallel with other activities. A heavy diary, like the one I illustrated in Figure 2, provides a number of different sorts of information, which can contribute to estimates of the extent of childcare activity. Table 4 sets out some of the possible estimators.

Table 4: Hours/Day by Various Definitions of Childcare

UK 2001: Adults with Child Age 0-7 in Household

	Hours/day	Per Cent of primary
Primary	1.5	100
Primary, own child co-present	1.4	93
Primary and secondary	2.5	167
Primary and secondary, own child co-present	2.4	160
All time own child is co-present	7.9	527

First, there is the primary childcare time. The 2000/01 UK evidence suggests that adults in households with children up to the age of seven devote one and a half hours per day to childcare as a primary activity. The heavy diary also has a separate column for respondents to indicate the co-presence of others; the great majority of the childcare time is spent in the presence of the respondent’s own child (and most of the remaining primary childcare time is young adults with their siblings).

Now add in childcare as a secondary activity, and the total rises to two and a half hours – 67 per cent higher than for “primary” activities alone. Again, virtually all of this time is in the presence of the children. Of course, not all childcare time involves co-presence with the child (consider, for example, the return from the school delivery trip). But of far greater significance is the time that parents spend not engaged in explicit childcare activities, but still in the presence of their children. The total duration of co-presence with the child is more than five times greater than the primary childcare time (see Bianchi (2000) for US comparison).

Which of these is the appropriate base for estimating the extent of non-market provision of childcare services? The primary activity alone is clearly insufficient. But the total of child co-presence time is, arguably, excessive, particularly insofar as it may involve the co-presence of *both* parents with a single child. This again points to the importance of a good sampling strategy for time diary surveys; in the case of the UK 2000-01 survey,

following the Harmonised European Time Use Study guidelines, all members of households aged 10 and above completed diaries for the same days. So it should be possible for a careful analyst to sort out most of these problems.

4. Extended National Accounts

My penultimate example concerns the extension of conventional National Accounts to include the value of unpaid work (mostly) in the household. This is important for a range of reasons. In a society experiencing rapid change, there is a great deal of movement of activities into and out of the domestic sphere as a result of technical and organisational change. The growth of self-servicing or self-provisioning involves final service production activities moving out of the economy as a result of improvements in domestic equipment and infrastructure combined with rising labour costs. At the same time there may be new sorts of state or market final service provisions – new restaurants, say, or childcare services – that transfer production activities previously undertaken by private households back into “the economy”. Unless household production is tracked in parallel to “the economy” the real welfare implications of longer-term socioeconomic change may be entirely lost. And the gendered distribution of production within the household means that the changes may also have major equal opportunities implications.

National product is estimated on two main bases. There are input methods, calculating production by summing the value added by each stage of the production process. And there are output methods, summing the market value of finished products. The identity of the results of these two calculations is the fundamental proposition of national accounting.

Most of the attempts to value domestic production have relied on input methods, and this, in the past, has been a major application of time diary research.

The input method is straightforward. We identify how much time is devoted to each of the categories of unpaid work and we multiply these by an appropriate wage rate to arrive at the value of the product. There are two alternative approaches to deciding on an appropriate wage rate.

- We either take the “shadow wage rate” of the person *doing* the unpaid work in the private household; or
- We take some equivalent wage, of either a specialised worker in the economy – for example a cab driver to value the output from driving the kids to school, or a chef for meals cooked at home, a nursery nurse for childcare and so on – or else a wage rate for non-specialist housekeeper.

These two approaches have different (indeed diametrically opposing) shortcomings. In fact, the **amount** of unpaid work does not vary much between social classes or households with widely differing wage levels. So the shadow wage approach to calculating extended household income adds much more to the incomes of high wage households than to low wage households, and thus **increases** apparent inter-household inequality. In absolute contrast, the “equivalent wage” approach in effect adds the same large constant both to rich and to poor households’ incomes, and hence **decreases** apparent inequality. The same facts, in short, have opposite consequences depending on which of the two theoretical approaches you adopt.

The underlying problem is that **both** approaches to input estimation simply take productivity levels as matters of assumption. The shadow wage would imply, for example, that bankers are much more productive as cooks than are professional cooks. The equivalent wage method assumes that both bankers and professional cooks are each exactly as productive as each other at baking cakes in their own homes. Both assumptions are plainly equally silly.

So increasingly attention is now turning to output methods. These involve counting household products – counting how many snacks and how many meals of two or three courses are consumed, how many nights sleep, how many trips accompanying children to school, and so on. The general-purpose time diaries provide, in addition to measures of all the unpaid work in the societies, also comprehensive information on all the consumption events. So, as an alternative to the input approach, we can look for market near-equivalents to use to value the diary counts of consumption episodes. We can look at the price of meals in different sorts of restaurants, and use these to price the meals taken in the homes of the sorts of people who eat in those restaurants. We use the cost of an equivalent taxi trip to value the school run, and so on.

And the great advantage is, that we now have separate estimators for the quantity of domestic labour inputs (from the diary information on the various sorts of unpaid labour time) and on the value of the outputs, (from the diary-based counts of consumption events multiplied by the value of the nearest-equivalent market product). This means that we have a non-circular way of calculating domestic productivity. We take the output value, subtract the cost of the materials embodied in them (the ingredients of the meals, the energy costs of the cooking, and so on) and the current cost of the capital stock (house, furnishings, the domestic equipment), and then divide the remaining output value by the input hours, to get an hourly effective return on the various categories of domestic work.

Table 5 shows a set of ONS estimates using this sort of method.¹ It shows, as we would expect, in some cases, rather low levels of domestic productivity. Compare for example the £2.59 per hour return on nutrition-related activities with the (then) £4 per hour minimum wage. We should of course remember that the non-economic psychic (or “process”) benefits from self-provisioning are not included in this estimation. And the returns on household maintenance and laundry activities are certainly non-negligible.

Table 5: Net Value Added, Hourly Effective Return to Labour: Non-market Household Production in the UK in 2000

	Housing, Assoc. Services	Transport	Nutrition	
NVA (£m)	194,497	101,444	64,936	
Time (million hours)	17,377	20,374	25,030	
Hourly ERL (£)	11.19	4.98	2.59	
Contribution of males	42%	54%	32%	
	Clothing, Laundry	Child Care	Adult Care	Total
NVA (£m)	36,429	220,494	10,566	628,366
Time (million hours)	5,069	61,884	3,264	132,999
Hourly ERL (£)	7.19	3.56	3.24	4.72
Contribution of males	13%	42%	43%	41%

Source: ONS Experimental Account (2002): (Holloway, 2002).

¹ Though since the results of the ONS time diary study have only recently become available, the output counts on which the table is based are derived from a series of separate commercial market research surveys.

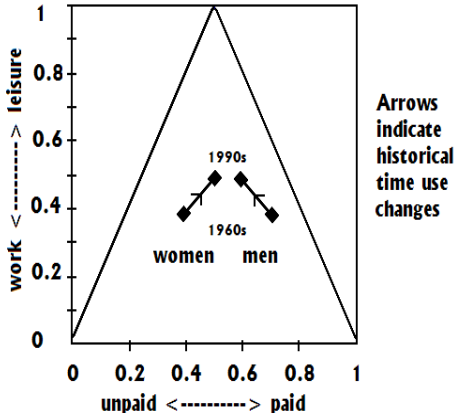
I must say I think this sort of result is impressive in itself. But this sort of calculation also has much wider implications for the future of national income accounting. We have here systematic connections between final goods and services produced within the System of National Accounts Production Boundary, non-market production activities, and consumption activities. We are in effect looking at the entire set of chains of provision that link economic activity to the satisfaction of each category human wants or needs. For nutrition, we can follow through from the mining of the minerals and the growing of the wheat, to the eating of the sandwich. And so on. The diary information, combined with the output approach to valuing domestic output provides a single comprehensive basis for connecting up, and accounting for, all the production and consumption activities of the society.

This “chains of provision” approach implies a comprehensive accounting of all activities, inside and outside the economy, in a way that allows a systematic tracking of all the consequences of technological and organisational change. However, this goes well beyond what we can cover in this lecture but, if anyone is interested in pursuing this, Chapters 2 and 8 of my *Changing Times* book explore this issue.

5. Long-term Change and the Virtuous Triangle

Instead I finally and briefly turn to an even more general and very simple picture of the balance of activities in developed societies.

Figure 4: Convergence by Gender



Since the 1980s I have been putting together a historical collection of national time diary studies, covering 20 countries over the last third of the twentieth century. For more than half of these countries, I have two or more surveys, separated by a decade or more, so I can form a picture of how time use patterns have been changing over an extended historical period. My last two exhibits are an attempt to provide the very simplest of summaries of what emerge from this.

It appears that sleep time overall hardly changed at all over this period, so I look just at the total of waking time, divided proportionally into the three categories of leisure (or consumption) time, paid work, and unpaid work time. I use the device of a triangle graph that represents these three proportions in just two dimensions. The triangle in Figure 4 defines a space such that an individual or group devoting all their waking time to leisure will be located at the apex of the triangle; if all the time were devoted to paid work they will be represented at the bottom right-hand corner of the graph; and if all the time were devoted to unpaid work they will be located at the bottom left hand corner. An equal proportion devoted to all three activities will be indicated by a point at the centre of the triangle.

In Figure 4, I represent the direction of historical change averaged across the countries for which I have time-use data (separately for men and women aged 20-59) by somewhat schematic and idealised arrows.² For both men and women, the arrows point upwards from the base of the triangle towards the apex, which indicates a reduction in the total of all work time. For the men, the arrow points upwards and somewhat to the left of the apex, indicating that their unpaid work is increasing relative to paid work. For the women, the arrow points upwards and somewhat to the right of the apex, indicating that their paid work is increasing relative to their unpaid.

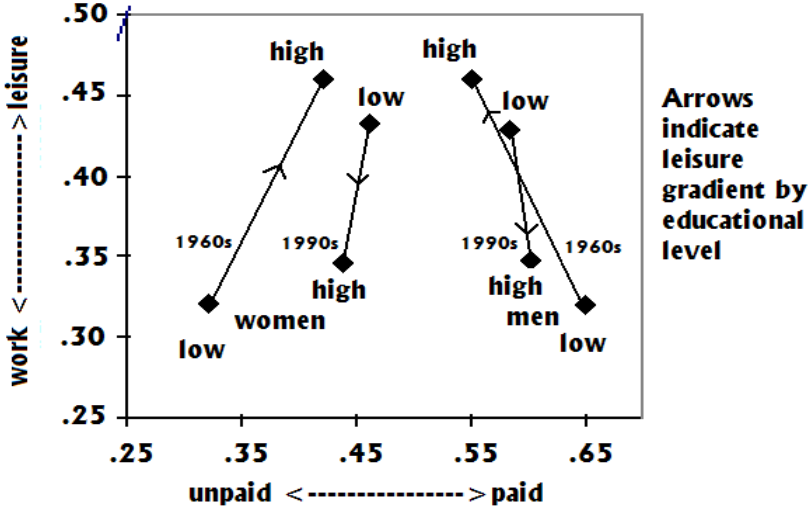
This overall convergence in the work patterns of working-age men and women is not at all surprising, though the gradual redistribution of unpaid work between the sexes was strongly denied by many sociologists when I started to collect this information. Perhaps more surprising, given the widely accepted proposition of “disappearing leisure” in developed societies, is the overall generally upward trend of the arrows.³

² The actual plots of the 20 countries may be found on page 132 of my *Changing Times* book.

³ My finding here is somewhat at odds with Juliet Schor’s influential (1992) text *The Overworked American*, but is strongly consistent with the more authoritative findings of Robinson and Godbey (1997).

Part of the answer may come from my final exhibit. Figure 5 shows a somewhat magnified (but still schematic and idealised) version of the central part of the same virtuous triangle picture. But this time the arrows indicate the direction of the leisure-time gradient with respect to levels of education. There is a dramatic change evident over the period from the 1960s to the 1990s. In the 1960s, the more highly educated had more leisure than the less well educated. By the 1990s the more highly educated had **less** leisure.⁴

Figure 5: Reversing the Status/Leisure Gradient



I think there is some important macroeconomics to consider here. Once, as good Keynesians, we sought to stimulate demand and hence employment by providing extra income for people with high marginal propensities to consume. But consumption takes time as well as money. In a world in which the privileged are appropriately characterised as money-rich, and time-poor, perhaps we should consider a neo-Keynesian policy of work-time reduction to stimulate demand, particularly to stimulate the time-intensive final service consumption. If the best-off members of the society have the least time available to spend their money in, perhaps we can stimulate demand just by increasing their free time. Certainly,

⁴ For the real plots, see *Changing Times* pages 220 and 221.

successive French and German governments seem to have been rather successful at this.

6. To Sum Up...

Let me just take you back over the terrain I have galloped across.

We started from the social atoms – defined as distinct events or episodes, with finite durations, that have explicit meanings or purposes. I talked first about how to collect organised samples of sequences of these through time budget or time diary surveys. I discussed some examples of how these surveys may provide indications, of potential policy relevance, of phenomena that are currently poorly measured, or altogether unmeasured, in conventional statistical systems. I talked about ways of using the diary evidence to provide more inclusive estimates of national output than we get from conventional national accounts. And finally I moved to discuss some really comprehensive pictures, of long-term changes in the time-use patterns of whole societies, and the relevance of these to macro-economic policy.

Plainly, time budget surveys are powerful instruments and, over the last few years, they have gradually started to be recognised as such. From being a methodological oddity in the 1960s, a plaything for the wilder and woollier sort of sociologist in the 1970s and 1980s, quite suddenly, in the later 1990s they have started to penetrate into mainstream official statistics. The US Bureau of Labor Statistics, started, at the end of last year, what is intended to be a continuous time diary study – at the cost of \$20 million per year, every year. Twenty EU Member and Candidate Member States over the last few years carried out national studies according to the guidelines set out by Eurostat. There are just two current EU States that do not have substantial and recent time budget surveys. These are Luxembourg, and Ireland. Well, you have been **most** hospitable.... and I do hope what I have had to say may encourage you to collect some Irish time-budget data to add to my collection!

For more information on time use studies in general, and on the Multinational Time Use Study on which Figures 4 and 5 are based, visit:
<<http://www.iser.essex.ac.uk/mtus/index.php>>

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