Measuring gender equality by means of time-use data

Bringing differences in the quality of daily life to the surface

Ignace Glorieux

**Vrije Universiteit Brussel - Sociology Department
Research Group TOR**
**International Association for Time Use Research
(IATUR)**

Strengths of time-use data

All activities are sequentially registered for a given period, together with the context of the activities (secondary activity, timing, duration, place of activity, with whom, … for whom, meaning, …)

Actual behavior: much less social desirable answers, less problems of memory decay

Brings informal work to the fore

In a lot of studies, only the duration of activities are reported, time-use data have much more potentials

Parameters of social time

Duration – How long?
Tempo – How much?
Timing – When?
Sequence – In what order?

In time-use studies mostly only durations are studied
intensively: durations are added, subtracted, …
just as social time is a homogeneous flux as conceptualized in
Newtonian time in natural sciences

Social time

The flow of the day is NOT a succession of identical moments

The 'quality' of time can be related to the parameters of time

Time-use data provide a wealth of details (context) that often remains unexplored

We need statistical techniques to deal with this complexity and to do justice to the 'social' quality of time

Duration

Differences in time-use between women and men

18-75 years old (Flanders, Belgium - 2013)

	Men	Women
Paid work	23:49*	16:36
Household work	13:52*	19:50
Child care	1:44*	2:58
Education	3:27*	4:27
Productive time	*42:45*	*43:52*
Personal care (incl. eating, …)	15:55*	18:00
Sleeping, resting	59:30*	61:08
Reproductive time	*75:25**	*79:09*
Social participation	7:54*	8:29
Leisure	29:47*	23:47
Recreative time	*37:41**	*32:17*
Waiting	0:16	0:18
Travelling	10:24	10:44
Transitional time	*10:40*	*11:02*
Other, unspecified	1:17*	1:38
Total	**168:00**	**168:00**

*Difference between women and men is statistical different (p≤0,05)

The traditional division of work

18-75 years old (Flanders, Belgium - 2013)

	Paid work	Household work	Child care	Total workload
Men	23:49	13:52	1:44	**39:25**
	-7:13	+5:58	+1:14	=
Women	16:36	19:50	2:58	**39:24**

(excl. traveling)

Duration/respondent, /participant & participation rate

Duration per respondent: counted over all respondents

Duration per participant: counted over all doers

Participation rate: proportion of respondents that registered given activity

Duration per participant = Participation rate x Duration per respondent

Example:
29,5% (Participation rate) of all men did 5:54' (Duration per participant) of 'child care' during the week of registration

This equals 1:44' per respondent
(0,295 x 5:54' = 1:44')

Duration/respondent, /participant & particiption rate

Participation rate can be used to study the involvement in certain types of activities

E.g. Involvement of men in certain household activities, child care activities, …

Female and male tasks in the household

	Time per week	% Time women	% Time men	% Part. women	% Part. men
FEMALE TASKS					
Clothes	1u55'	88%	12%	87%	27%
Cleaning	3u11'	80%	20%	92%	47%
Meals, cooking	5u39'	72%	28%	97%	77%
MALE TASKS					
Chores	2u03'	24%	76%	47%	63%
Gardening	1u43'	35%	65%	34%	45%
NEUTRAL TASKS					
Shopping	3u06'	60%	40%	94%	81%
Care for pets/plants	0u30'	53%	47%	35%	22%
Organization, admin.	0u42'	51%	49%	57%	49%

The traditional division of work: discriminant analysis

Predicting sex of respondent on basis of durations of activities   (full week - 39 categories) :

82% of the respondents is correctly classified

83,9% of the men

80,9% of the women

The traditional division of work: discriminant analysis

Men
(do more)

Discriminant
coefficient

Women
(do more)

The traditional division of work: discriminant analysis

Men (do more)	Discriminant coefficient	Women (do more)
	0.625	Household work
Odd jobs	0.306	
	0.254	Dressing and grooming
Paid work	0.238	
	0.212	Shopping

Tempo

Number of activities during a given period

Indicator of fragmentation

Counting the number of activities or episodes recorded during one day

Comparing different groups – e.g. men and women, working mothers and non-working mothers – in terms of the mean number of activity occurrences

Indicator of fragmentation of housework, childcare, leisure time, …

Counting the number of activities or episodes of a certain category of activities per hour devoted to this category of activities (e.g. the number of leisure activities as an indicator of fragmentation to study the different character of leisure of men and women)

Timing

The timing of work of university professors (Belgium, 2015)
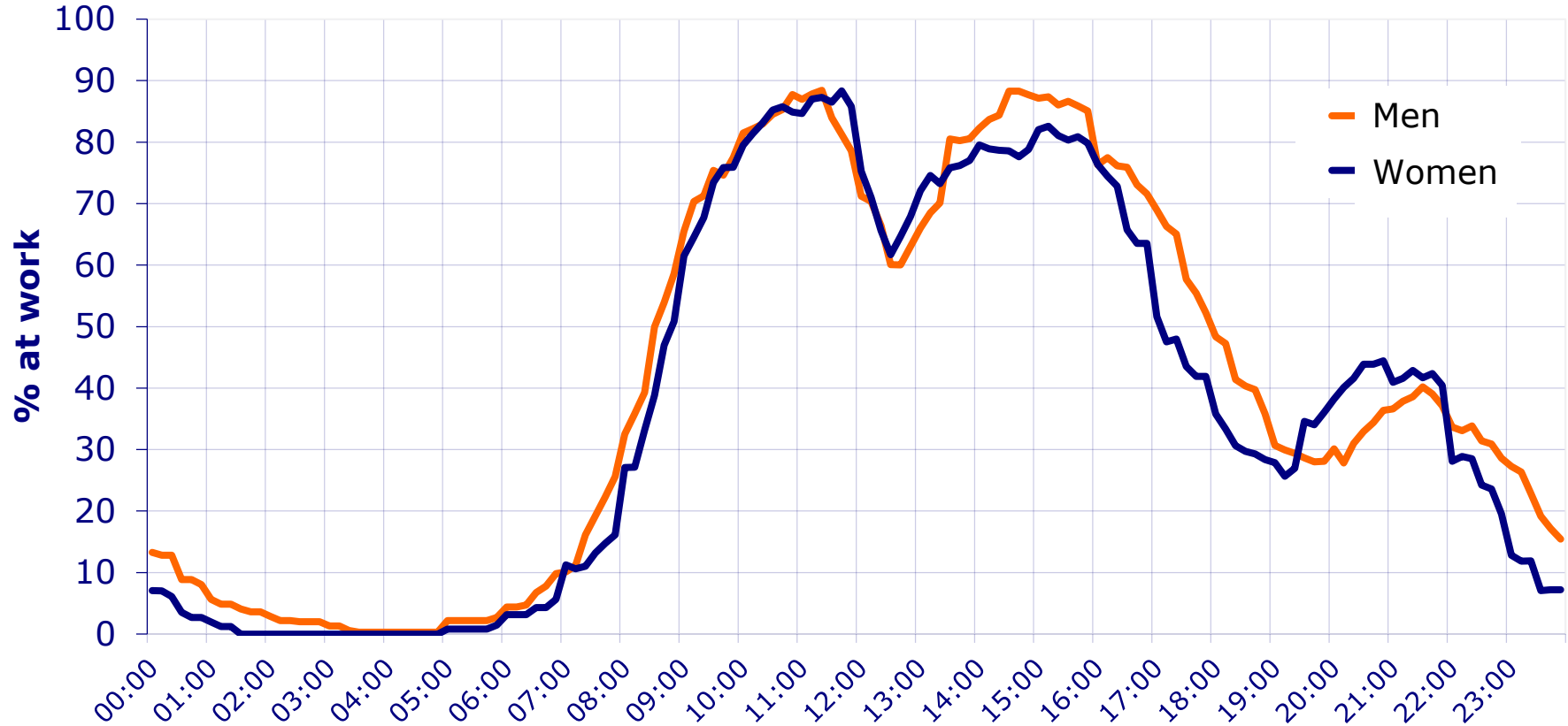
The timing of activities of univ. professors (men)
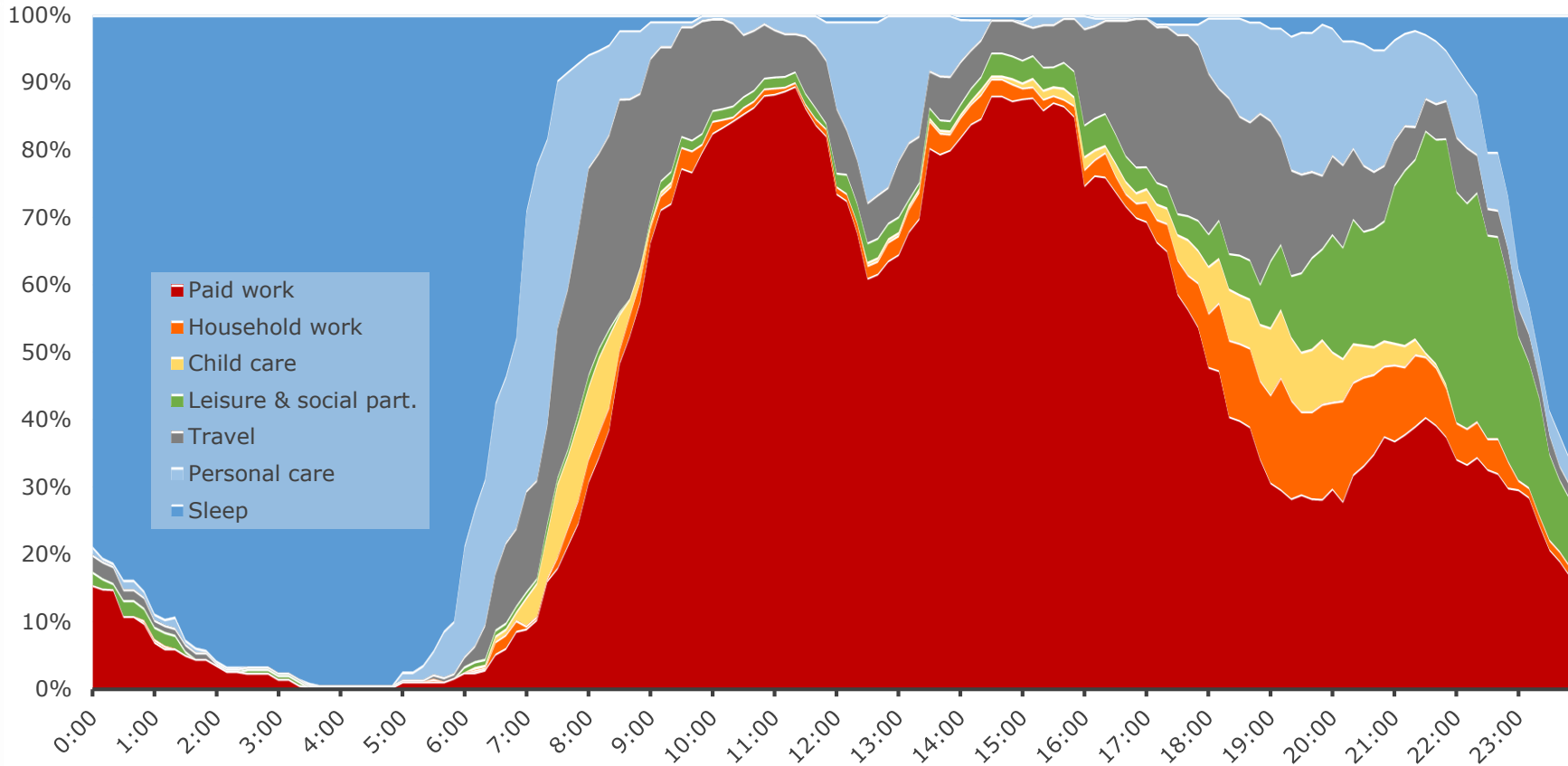
The timing of activities of univ. professors (women)
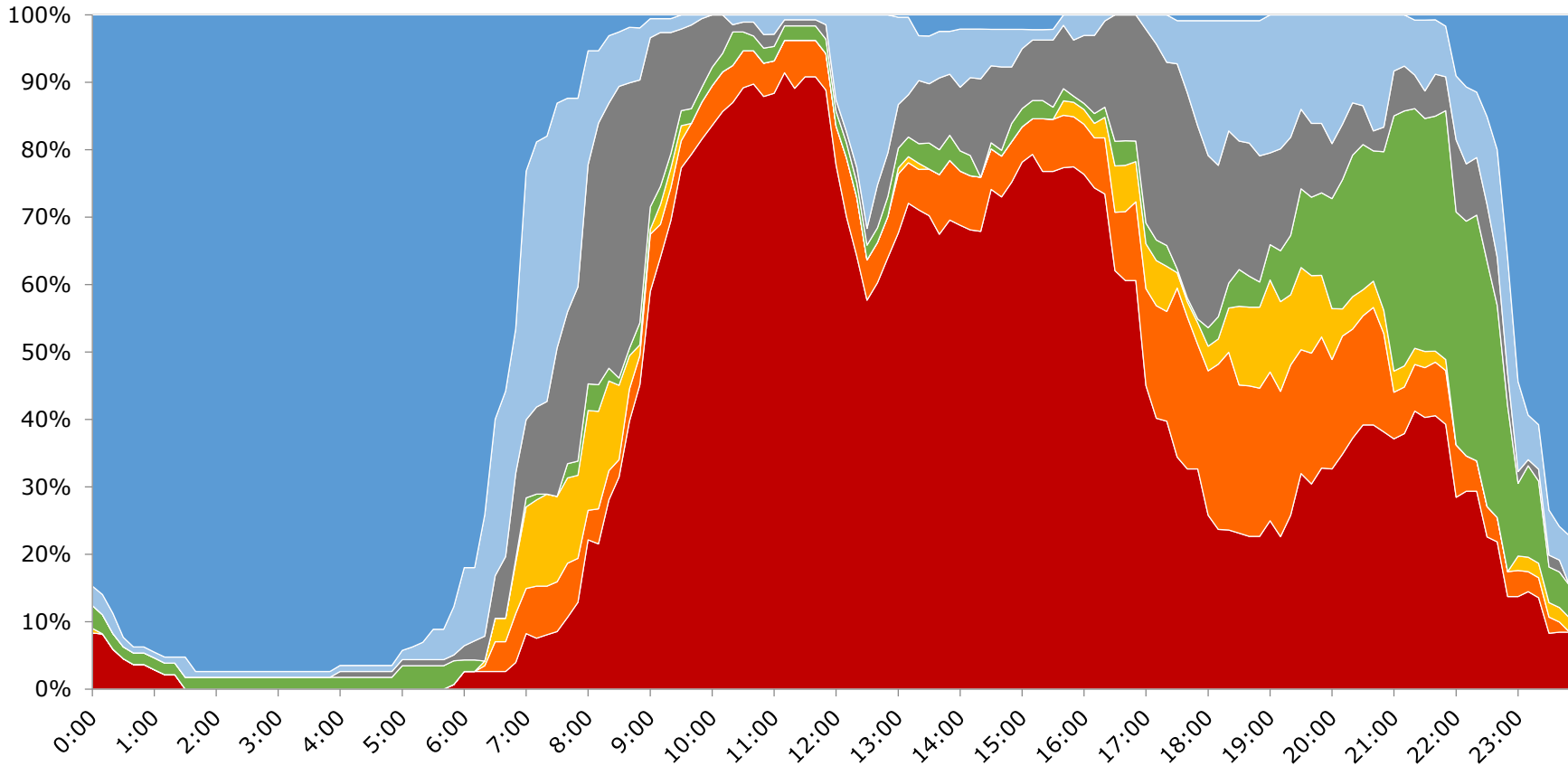
Sequence

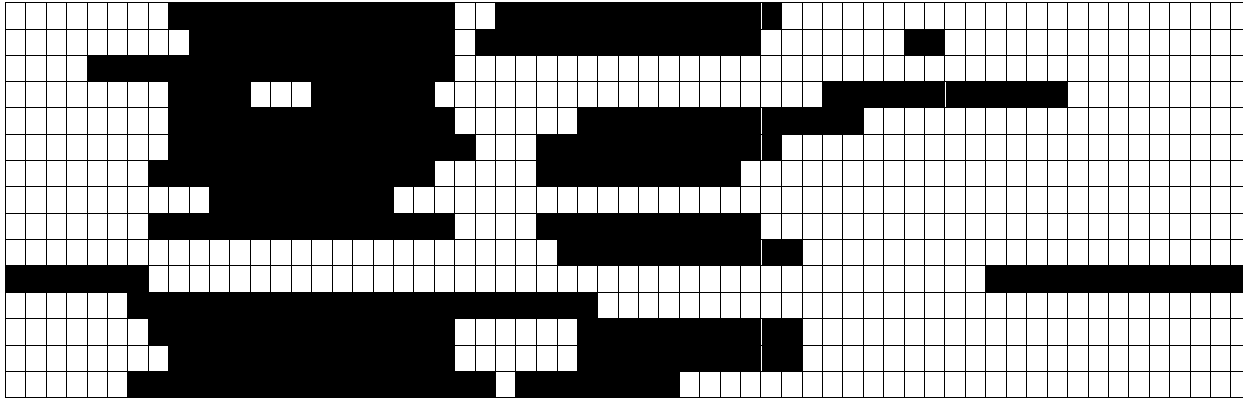# Typology of working day patterns (example Belgium)

Under the surface of an average tempogram, a variety of different work time patterns may be hidden

Goal of sequence analysis: the identification of different types of working time patterns by means of sequence analysis (Optimal Matching Analysis)
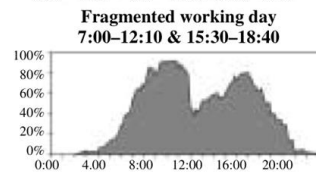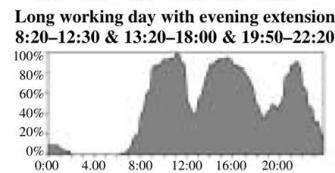
Typology of working day patterns (example Belgium)

Sequence analysis:
assessing the difference between each pair of individual sequences,in this case individual work schedules (only two states: work – non-work)

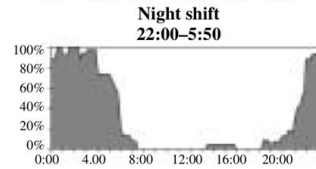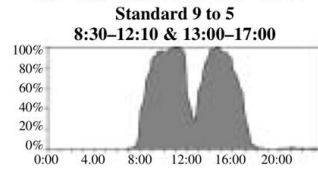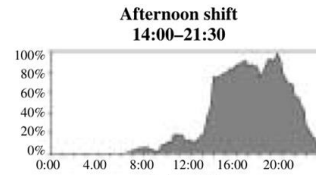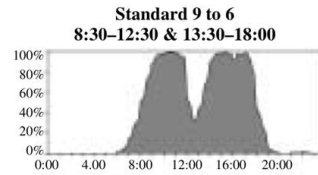Results in a distance matrix between all sequences
Cluster analysis to discover different patterns

Typology of working day patterns (example Belgium)
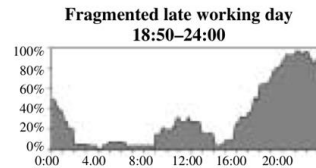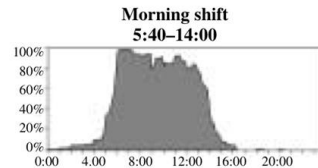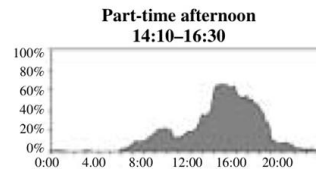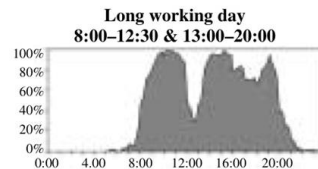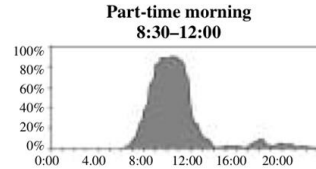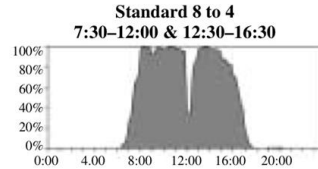
Meaning

The meaning of activities

Why did you do this activity?
(different answers possible, preferably one anwer)

Because I am obliged or compelled to
(obligation)

Because to please others or because I consider it as my duty
(others/duty)

Out of necessity, because it is necessary to make other things
possible or because there is no other choice
(necessity)

Because I like it, because it is pleasant
(pleasure)

Female and male tasks in the household

	Female	Male
	Not flexible	Flexible
	Routine	Creative, stable
	Inside, not visible	Visible

Female and male tasks in the household

	Time per week	% Time women	% Time men	% Part. women	% Part. men
FEMALE TASKS					
Clothes	1u55'	88%	12%	87%	27%
Cleaning	3u11'	80%	20%	92%	47%
Meals, cooking	5u39'	72%	28%	97%	77%
MALE TASKS					
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Care for pets/plants	0u30'	53%	47%	35%	22%
Organization, admin.	0u42'	51%	49%	57%	49%

Different meaning of female and male tasks in the household

	Obligation	Others/ Duty	Necessity	Pleasure
FEMALE TASKS				
Clothes	17%	19%	60%	7%
Cleaning	16%	19%	61%	7%
Meals, cooking	12%	19%	54%	18%
MALE TASKS				
Chores	13%	16%	54%	20%
Gardening	4%	10%	31%	60%
NEUTRAL TASKS				
Shopping	11%	10%	56%	26%
Care for pets/plants	26%	9%	54%	13%
Organization, admin.	9%	13%	34%	47%

Conclusions

Time-use data refer to actual behavior: much less social desirability and memory decay

Time-use data are multi-dimensional, analyses should focus on different dimensions

Analyses of time-use data can bring the hidden language of social time - and as such the more latent inequalities between women and men - to the fore

Thank you

ignace.glorieux@vub.be

Research Group TOR – Vrije Universiteit Brussel

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