Bridging the micro-macro gap in population forecasting

Contract no. SP23-CT-2005-006637

Deliverable D22

Work Package 5

Age profiles estimation for family and fertility events based on micro data

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Contents

Abstract

Focusing on fertility behaviors and transitions between various living arrangements, in this paper we deal with the methodological background of the age profiles estimation based on relatively standard retrospective family and fertility survey data. After the specification of the micro-level data requirements, the method is implemented via a data processing routine that leads to the estimation of regression models. These models evaluate the smoothed age profile and the relative risks given by time-fixed and time-varying covariates for each transition. Age profiles computed for the relevant transitions in the field of families and fertility will constitute the input for the MicMac model[1]. Estimation is carried on data from France, Italy, and the Netherlands.
The major advantage of the method developed here is flexibility: it can be applied to every setting where micro-level data on transitions are available from a large-scale representative survey (e.g., Fertility and Family Survey; Generations and Gender) and for different kind of transitions. The whole method is implemented using the R software and it could be applied to real data through the execution of R functions contained in the MAPLES package. All the functions and utilities and their usage are shown in special boxes throughout the text and in appendix 1. Moreover, appendix 2 contains the complete syntax code.

Acknowledgments: the data for this analysis have been provided by ISTAT (Italian National Institute of Statistics), Centraal Bureau voor de Statistiek, The Netherlands and INSEE, France.

[1] More information on MicMac is available on the website www.micmac-projections.org.

1. The MAPLES (Method for Age Profile Longitudinal EStimation)

The new methodology for population forecasting that is being developed within the MicMac project aims at taking into account not only macro demographic changes but also life course trajectories of individuals (see, e.g., Willekens, 2005; van der Gaag et al., 2006). In this framework, the life course is viewed as a sequence of states and events; each event marks a transition from one state to another. The study of a single transition is based on the estimation of its transition rates (from the original state to the destination state). From the literature on living arrangements and fertility (see, e.g., Billari et al., 2005) we know these behaviours are strongly related to age. Indeed, such variation with age has traditionally been exploited in demographic forecasting.
In this paper, our first aim is to descrive the general method for the estimation of age profiles for the main transitions experienced by individuals, as far as living arrangement and fertility behaviours are concerned.
Our analytical strategy starts from assuming that longitudinal micro data are available, i.e. that such data have been collected (otherwise, their collection has to be planned) allowing for a longitudinal reconstruction of the life course, at least from a retrospective point of view. In other words, the method developed has to start from information on the biography of the individual: all the dates of the more important events must be collected. Longitudinal data can be obtained both from retrospective surveys and from panel surveys. Here, we only refer to the former case. *Retrospective surveys* concerning family and fertility behaviours are rather available for most European countries (e.g., from the Fertility and Family Survey project during the 1990s, from the Generations and Gender Project during the 2000s, and from other data collection ventures based on National Statistical Offices). Retrospective surveys permit to collect a wide range of information on to the past experience of individuals with limited costs. On the other hand, our attention is limited uniquely to survivors only, since we do not have information about deaths nor about individuals who emigrated. However, this feature is not necessarily a disadvantage in methodological terms since we consistently reduce the number of events that drives the individual out of the observed sample over time, simplifying the calculation of transition rates. In the literature on demographic microsimulation, biographic information collected in retrospective surveys has often been used (see, e.g., Wachter et al., 1998). In particular, the method presented in this paper (MAPLES) is applied to the following three retrospective surveys:

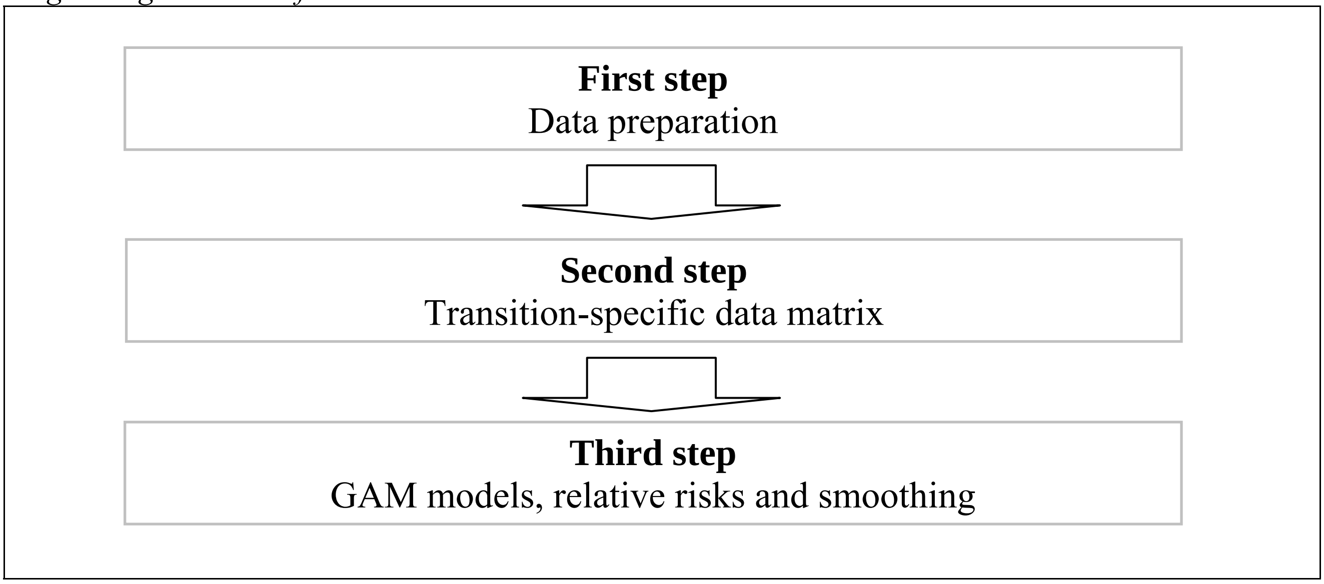
- ISTAT "Famiglia e soggetti sociali" (FFS-IT) conducted in Italy at the end of 2003, and associated to the Generations and Gender Programme (GGP)
- Fertility and Family survey for Netherlands (FFS-NL) conducted between February and May of 2003.
- French Generations and Gender Survey (GGS, Ined-Insee, 2005)

The method presented in this paper is a development of the one proposed in D21 (Impicciatore *et al*., 2006). As a general rule, the method can be segmented in the following steps:
1. The first step consists of preparing the data for subsequent computations. Information from the original dataset has to be adapted. The aim is to prepare an initial dataset composed of the dates of the most important events in the field of living arrangements and fertility, separately for men and women. Throughout this text, the word *date* refers to the time point of a certain event measured in the form of month and year. After the specification of the state space and of the possible transitions, we give all the indications for the preparation of the input data file. When the initial dataset is ready, MAPLES executes some data consistency checks, the insertion of missing months, the specification of status variables and the computation of decimal dates and ages at various events. This step is common to every transition.

2. In the second step, MAPLES computes episode-data for each specified transition, taking into account time fixed and time varying covariates. It transforms micro-data (one row = one individual) into macro data structure (one row = a combination of age and levels of covariates). The resulting

data matrix contains events and time of exposure for a specified period of time before the interview (window of observation). This matrix is *transition-specific* because its computation depends on the definition of episodes that are specific to each transition.

Fig. 1 Organization of the method.



3. In the third step, we obtain age profiles by modelling the observed set of events and exposure times, stored in the transition-specific data matrix, by a smoother function. In particular, MAPLES uses GAMs (Generalized Additive Models) (Hastie & Tibshirani, 1990) in a way that permit to jointly estimate the baseline age profile and the effect of covariates as multiplicative change from the baseline.

For each row of the *transition-specific data matrix*, we model the logarithmic transformation of the transition rate (events divided by time of exposure) by adding a (smooth) function of age and a set of fixed covariates. In order to remove the proportionality assumption which would be implied by the addition of log-rates, MAPLES considers the multiplicative change given by a covariate separately for each sub-interval of age. A final smoothing procedure ensures the continuity of the final age profiles.

MAPLES has been developed with the aim to construct a flexible method that may be applied in different contexts, when survey micro-data are available. As a result, this method can be applied to every setting where relatively standard family and fertility micro-level data are available from a large-scale representative survey. Moreover, it takes into account the most important interactions between different trajectory in the field of fertility and living arrangement through the specification of different covariates, both time-constant and time-varying over the life course. The independence assumption underlying the MicMac project permits to obtain transition rates for every possible combination of covariate levels. Being based on regression model the method permits to evaluate confidence intervals and to test hypotheses. The whole method is written in R software and it could be easily recalled as an R function in order to be applied to real data.

2. Data preparation

In the first step, the main focus is the preparation of the initial dataset and the computation of basic variables at the individual level such as dates in a decimal format, ages at various events and status variables. In order to specify the characteristics of the input data file, we need to define unambiguously the state space and the set of transitions that we want to analyze. Moreover, we have to cope with inconsistent and missing data.

2.1 State space and transitions

Starting from the scheme proposed in de Beer et al. (2006), we develop the reference scheme of possible transitions in three fields: 1) marital status; 2) fertility and 3) living arrangement. The choice of transitions is strongly influenced by micro data availability. In this sense, we fit the state space on the basis of standard information generally available in Gender and Generation Surveys (Vikat *et al*., 2007). Moreover, states are chosen in such a way that transition from state A to state B is caused by a non-repeatable event. We call the generic transition as TR*X* where *X* is an identification code.
As far as *marital status* is concerned, we distinguish between first marriage and second (or following) marriage. We do not consider further transitions after the entry in the second marriage. In table 1 we can see the qualitative shape of the transition matrix.

Table 1. Marital status. State space and transitions

From \ to	Never married	First marriage	Second marriage	Divorced	Widowed
Never married	-	TR1			
First marriage		-		TR2	TR3
Second marriage			-		
Divorced			TR4	-	
Widowed			TR5		-

There are many possible transitions in the field of *living arrangements* but it is rare to have detailed information. This forces us to limit the number of possible states. Given the usual information contained in the GGS, we focus our attention to the following states: at parental home, alone/with others (never in union), first union, separated (after 1st union disruption), second union. We do not consider further transition after the entry in the second union (table 2)

Table 2. Living arrangement. State space and transitions

From \ to	at parental home	Alone/with others (never in union)	First union	Separated (after 1st union disr.)	Second union
at parental home (never in union)	-	TR7	TR6		
Alone/with others		-	TR8		
First union			-	TR9	
Separated (after 1st union disruption)				-	TR10
Second union					-

As far as *fertility* is concerned, the possible states are childless, 1 child, 2 children, 3 children, 4 or more children. Transition such as 0 → 2, 1→3, etc. caused by multiple births are not taken into account. A childless woman who has a twin birth simply experiences the transition 0→1 and 1→2 at the same date. The transition matrix is given in table 3.

Table 3. Fertility (own children ever born). State space and transitions

From \ to	childless	1 child	2 children	3 children	4+ children
Childless	-	TR11			
1 child		-	TR12		
2 children			-	TR13	
3 children				-	TR14
4+ children					-

2.2 The initial dataset (input data file for R)

Table 4 reports the record structure that is needed in the initial dataset to be input by the R packages, in order to compute the rates for all transition specified in section 2.1. Variables highlighted in gray (id, weight, date of birth, date of interview, sex, and education) are compulsory: missing values are not allowed. Further information is optional and we may simply do not include it, or part of it, in the dataset. Weights must be normalized (average weight must be 1). If data have no weights it is sufficient to specify a unit weight for all individuals in the sample.
We assume that individuals in the dataset are aged 18 and more at the interview. All dates are expressed in calendar month (format MM: 1 to 12) and year (format YYYY).
Sex is coded as follows:

1. Men
2. Women

Edu is the level of education reported by respondents (with at least 18 years old) at the interview. We consider this variable as *time-fixed* in the sense that values remain constant throughout the biography. The variable is coded as follows:

1. Primary (ISCED0 *pre-primary education* and ISCED1 *first stage of basic education*)
2. Lower secondary (ISCED2 *second stage of basic education*)
3. Upper secondary (ISCED3 *upper secondary education* and ISCED4 *post secondary non-tertiary education*)
4. Tertiary (ISCED5 *first stage of tertiary education* and ISCED6 *second stage of tertiary education*)

Variable names in the initial dataset must be exactly the same as they appear in table 4.
A transition is well defined when we know which event causes it, at which point in time it occurs and when the individual starts to be *at risk* of living this event. Moreover, at a certain point in time the individual may experience an event that does not permit to follow his/her life course further on, i.e. the observation is censored (Blossfled and Rowher, 2002). With longitudinal retrospective data this usually happens at the interview or, for example, at the death of spouse when we are studying the transition to divorce for married people.

Table 4. Initial dataset record structure.

variable name	Description	Format
Id	Identification number (individual level)	8
Weight	Normalized Weight	10
Ybirth	Year of birth	4
Mbirth	Month of birth	2
Yint	Year of interview	4
Mint	Month of interview	2
Yexit	Year of exit from parental home	4
Mexit	Month of exit from parental home	2
Ymarr	Year of first marriage	4
Mmarr	Month of first marriage	2
Ydiv	Year of divorce (first marriage)	4
Mdiv	Month of divorce (first marriage)	2
Yved	Year of death of spouse (first marriage)	4
Mved	Month of death of spouse (first marriage)	2
Ypartn	Year of first union (cohabitation or marriage)	4
Mpartn	Month of first union (cohabitation or marriage)	2
Ydiss	Year of first union (cohabitation or marriage) disruption	4
Mdiss	Month of first union (cohabitation or marriage) disruption	2
ypartn2	Year of second union	4
mpartn2	Month of second union	2
ymarr2	Year of second marriage	4
mmarr2	Month of second marriage	2
ych1	Year of first child's birth	4
mch1	Month of first child's birth	2
ych2	Year of second child's birth	4
mch2	Month of second child's birth	2
ych3	Year of third child's birth	4
mch3	Month of third child's birth	2
ych4	Year of fourth child's birth	4
mch4	Month of fourth child's birth	2
Sex	Sex	1
Edu	Level of education (ISCED)	1

In table 5 we show for each possible transition the events that define episodes, i.e. the events that cause the entry into the period at risk, the transition itself and the events that imply the exit from observation (censoring). Given these informations we can specify the dates required for the analysis of each transition. In any case the date of interview and the birth date of respondents are necessary.

Table 5. Episodes and dates required for each transition

TRANSITION	Episode starts at	Events that cause transitions	Events that cause censoring	Dates required[(1)]
TR1 never-married → married (1st marriage)	respondent's birth	1st marriage	interview	(***ymarr***,*mmarr*)
TR2 married (1st marriage)→ divorced	1st marriage	divorce	death of spouse, interview	(***ymarr***,*mmarr*) (***ydiv***,*mdiv*) (***yved***, *mved*)
TR3 married (1st marriage)→ widowed	1st marriage	death of spouse	divorce, interview	(***ymarr***,*mmarr*) (***ydiv***,*mdiv*) (***yved***, *mved*)
TR4 divorced→ married (2nd marriage)	divorce	2nd marriage	death of spouse, interview	(***ymarr***,*mmarr*) (***ydiv***,*mdiv*) (***yved***,*mved*) (***ymarr2***,*mmarr2*)
TR5 widowed→ married (2nd marriage)	death of spouse	2nd marriage	interview	(***ymarr,***mmarr*) (***ydiv***,*mdiv*) (***yved***,*mved*) (***ymarr2***,*mmarr2*)
TR6 at parental home (never in union) → first union	date of birth	exit from parental home for union	exit from parental home for other reasons ,interview	(***ypartn***,*mpartn* ()***yexit***,*mexit*)
TR7 at parental home→ alone/with others (never in union)	date of birth	exit from parental home for other reasons	exit from parental home for union, interview	(***ypartn***,*mpartn*) (***yexit***,*mexit*)
TR8 alone/ with others (never in union) → first union	exit from parental home	1st union	interview	(***ypartn,***mpartn*) (***yexit***,*mexit*)
TR9 first union→ separated (after 1st union disruption)	1st union	1st union dissolution	interview	(***ypartn***,*mpartn*) (***ydiss***,*mdiss*)
TR10 alone or with other persons (after the 1st union disruption)→ with a partner (2nd union)	1st union dissolution	2nd union	interview	(***ydiss***,*mdiss*) (***ypartn2***,*mpartn2*)
TR11 childless → 1 child	respondent's birth	1st child's birth	interview	(***ych1***,*mch1*)
TR12 1 child → 2 children	1st child's birth+ 9 months	2st child's birth	interview	(***ych2***,*mch2*) (***ych1***,*mch1*)
TR13 2 children → 3 children	2nd child's birth+ 9 months	3rd child's birth	interview	(***ych3***,*mch3*) (***ych2***,*mch2*) (***ych1***,*mch1*)
TR14 3 children → 4 children	3rd child's birth	4th child birth	interview	(***ych4***,*mch4*) (***ych3***,*mch3*) (***ych1***,*mch1*) (***ych2***,*mch2*)

(1) Date of births, date at the interview and sex are always needed.

BOX 1. Rules for the preparation of the initial dataset

1. The record structure of the data file must be as shown in table 4. The same variable names specified in this table must be used. Other names are not recognized and the meaning of the dates strictly follows the indication given in table 4. However, the order of variables is not important (variables could be sorted in a different way).

2. The initial dataset must contain id, weight, date of birth (*ybirth*, *mbirth*), date of interview (*yint*, *mint*), sex and education. All other dates are optional.

3. When the individual has not experienced an event, the date (*year*, *month*) must be coded as empty cells (blank). Other codes like "na", "999999", "mv", etc are not accepted. R will read empty cells as "Not available" information and it will call them as "NA" in the internal dataset.

4. A missing year means that the related event has not been experienced. If the individual has experienced a specific event but the year is not available, the case must be dropped from the initial dataset.

5. Dates may contain missing months (totally or partially). In that case, virtual months are computed as random numbers with the constraints specified in table 6.

BOX 2 The `chkfile` utility

The utility **`chkfile()`** provides basic information for the specified dataset. In particular, it specifies missing months and missing years.
The syntax is:

```
chkfile(filename)
```

The application to the Italian dataset gives the following output

```
> chkfile("ITALY.dat")
[1] ______________________________________________
[1] Check available data
[1] WARNING:mdiv missing
[1] WARNING:mved missing
[1] WARNING:mexit missing
[1] WARNING:ydiss missing
[1] WARNING:mdiss missing
[1] ______________________________________________
```

Given this output and referring to table 5, we are able to identify which transition can be studied.

2.3 Status variables

MAPLES differs from the previous version (see D21) in that the user does not need to specify a *status* variable. This variable, that indicates if the event has been experienced or not before the interview, is now computed internally according to the availability of the event's year. The rule is the following: when the year of a date is missing, we suppose that the event has not been experienced. For example, let us consider transition TR11 (from "first child" to "second child"). If the year of second child's birth is missing, we assume that the respondent has only one child at the interview and the corresponding status variable is 0. If the year of second child's birth is not missing, the status variable is 1 (event occurred). Anyhow, if the year of first child's birth is missing, we assume that the respondent is still childless at the interview: the case is "not applicable" in the analysis of second birth because the individual has never been at risk to live the event and the status variable is fixed at 9.
As a general rule, for a generic transition TR*X* the *status* variable have the following values:

- 0 if the individual has never experienced *TR* at the time of the interview (the case is *censored* at the interview*);*
- *1* if the individual experienced *TR* before the interview;
- *9* if the case is not applicable, i.e. the individual has never been at risk to experience TR*X*.

The only status variable that does not follow this rule is the one that is associated to the event *leaving parental home*. There are two possible destinations: union (marriage or cohabitation) or other reasons (single living or with other persons). Moreover, there are no "not applicable" cases since everybody is considered as beginning their life in their parents' household. We do not know the reason for leaving home but considering the date at exit from parental home (*yexit, mexit*) and the date at first union (*ypartn,mpartn*), we can compute the status variable with the following categories:

0 No exit (no *yexit*)
1 Union (*yexit*≥*ypartn*)
2 Other reason (*yexit*≤ypartn or no *ypartn*)

The internal computation of status variables strictly requires that unknown dates are not written as missing in the initial dataset. A missing year simply means that the associated event did not occur. This is in line with indications given by other authors. For example, Matsuo & Willekens (2003) specify that a missing year means that the event did not occur even when the respondent indicated, in another item, that the event did occur. Therefore, the user must pay attention to missing values in the dataset, check possible missing dates and exclude ambiguous cases from the dataset.

2.4 Missing months

It is desirable that the user specify months using all available information. However, if a missing year is critical, depicting a missing date, a missing month (together with no missing year) can be easily overcome.
Two circumstances are conceivable:

- months are totally missing: for a specific event, the month of occurrence is not available because this information is not gathered in the questionnaire.
- months are partially missing: month was asked in the interview but respondent did not answer.

In both cases, MAPLES estimates missing months through the application of Uniform distribution, i.e. it inputs a random number between 1 and 12. For example, if we do not have the month at the first marriage (*mmarr*) but we have the year (*ymarr*), date of marriage (and age of marriage) can be computed by setting month of first marriage as a random number form 1 to 12. In some cases, we have additional information that can be used to estimate missing months. All the criteria used with this aim can be read in table 6. Missing months are not allowed for date of birth and interview.

Table 6. Constraints used for the imputation of missing months

Missing month	Not missing month	Condition	Input missing month as month at
exit	1st union	year of exit = year of 1st union	1st union
1st union	1st marriage	year of 1st union= year of 1st marriage	1st marriage
1st union	exit	year of 1st union= year of exit	exit
1st union disruption	1st union	year of union disruption = year of 1st union	random: 1st union to 12
1st union disruption	2nd union	year of union disruption = year of 2nd union	random: 1 to 2nd union
2nd union	1st union disrupt.	year of 2nd union=year of union disruption	random: 1st union disrupt. to 12
1st marriage	1st union	year of 1st marriage= year of 1st union	1st union
1st marriage	exit	year of 1st marriage= year of exit	exit
divorce	2nd marriage	year of divorce = year of 2nd marriage	random: 1 to 2nd marriage
death of spouse	2nd marriage	year of death of spouse = year of 2nd marriage	random: 1 to 2nd marriage
death of spouse	1st marriage	year of death of spouse=year of 1st marriage	random:1st marr. to 12
2nd marriage	divorce	year of divorce = year of 2nd marriage	random: divorce to 12
2nd marriage	death of spouse	year of death of spouse = year of 2nd marriage	random: death of sp. to 12
2nd child	1st child	year of 2nd birth = year of 1st birth	1st birth
2nd child	1st child	year of 2nd birth = year of 1st birth +1 and month of 1st birth>4	random: (1st birth -3) to 12
3nd child	2st child	year of 3rd birth = year of 2nd birth	2nd birth
3nd child	2st child	year of 3rd birth = year of 2nd birth +1 and month of 2nd birth > 4	random: (2nd birth -3) to 12
4nd child	3st child	year of 4th birth = year of 3rd birth	3rd birth
4nd child	3st child	year of 4th birth = year of 3rd birth +1 and month of 3rd birth > 4	random: (3rd birth -3) to 12

2.5 Consistency checks

The focus on dates can reveal several inconsistencies that may remain hidden otherwise. In particular, some sequences of dates cannot be real (e.g. events before the birth; second marriage experienced before the end of first marriage, second child born before first child) or dates of some events are clearly not reported even if they clearly occurred (e.g. second marriage is reported while information about the end of first marriage are missing).
Inconsistent sequencing and/or timing of events may be due to typing errors made by interviewer or during the data capture. The user should use all information at his disposal in order to correct these inconsistencies but some of them could remain in the dataset. Table 7 shows the list of consistency checks that MAPLES executes on the initial dataset. When an inconsistent date is detected for a specific case, MAPLES assigns value 9 to the to the correspondent status variable. This means that the case is dropped from the dataset every time that we want to study a transition that requires the date reported as inconsistent. This means that the case is dropped from the calculations when we

study a transition that requires the date reported as inconsistent. If an inconsistency emerges for another event that is not currently required, the case is included in the analysis. For example, if individual *i* shows inconsistency in the date of exit from parental home, when we analyze first child's birth (TR11), the *i*-th individual is included in the analysis, but if we focus on transition to first union (TR6), then the individual is dropped.

Table 7 Criteria used in order to identify inconsistent cases.

Year at:		Year at:
exit from parental home	<	birth
first union	<	birth +14
first union disruption	<	first union
marriage	<	birth +14
divorce (1st marr.)	<	marriage
death of spouse (1st marr.)	<	marriage
second union	<	first union
second union	<	first union disruption
second marriage	<	death of spouse (1st marr.)
second marriage	<	divorce (1st marr.)
first child	<	birth + 14
second child	<	first child
third child	<	second child
fourth child	<	third child

Years of events must have lower or equal to the year of interview.

BOX 3 The `consistency` utility

The utility **`consistency()`** is a tool included in MAPLES library that executes all the consistency checks presented in table 7 for a specified data file. It permits the user to take a first glance to the quality of the initial dataset. The syntax is

```
consistency(filename,showid=T)
```

Option `filename` Input datafile (with path)

The application of the utility *consistency* to the Italian dataset FFS 2003 called *ITALY.dat* shows the following output (noc means "number of cases"):

```
> consistency("ITALY.dat")
[1] Consistency check. File: ITALY.dat
[1] ____________________________________________
[1] 1st union<birth+14 - noc: 8
[1] 1st marriage<birth +14 - noc: 13
[1] divorce<=1st marriage - noc: 1
[1] death of spouse<=marriage - noc: 18
[1] 2nd union<=first union - noc: 2
[1] 1st child<birth + 14 - noc: 26
[1] 2nd child<1st child -  noc: 18
[1] 3rd child<2nd child - noc: 11
[1] 4th child<3rd child - noc: 5
```

```
[1] ____________________________________________
```

Option `showid=T` shows the ID (identification number of inconsistent cases. This could help the user to take a look at the original dataset. The output becomes:

```
> consistency("ITALY.dat",showid=T)
[1] Consistency check. File: ITALY.dat
[1] ____________________________________________
[1] 1st union<birth+14 - noc: 8
[1] Cases ID: 54301 292501 394902 609301 731601 1081202  1512301 1689401
[1] 1st marriage<birth +14 - noc: 13
[1] Cases ID: 54301  174901  92501  311501 394902  480702 609301  731601
[10] 1081202 1512301 1689401 1837801 1876001
[1] divorce<=1st marriage - noc: 1
[1] Cases ID: 901903
[1] death of spouse<=marriage - noc: 18
[1] Cases ID: 4901   339401 347101 613003 616501 723604  907002 959301
[10] 990701  1112901 1189801  1418001 1452901 1481901  1605601  1605602 1792803
[19] 1802501
[1] 2nd union<=first union - noc: 2
[1] Cases ID: 486401   1876001
[1] 1st child<birth + 14 - noc: 26
[1] Cases ID: 54301  75202 122201 150804  164902 312102  330602  480702
[10] 486202  731601 757502  774202  979301   1081202  1223202   1252402
1452602
[19] 1467402  1480401  1512301  1592802  1689401 1713702 1836802 1876001
1902402
[1] 2nd child<1st child -  noc: 18
[1] Cases ID: 39601  390001  462002 578001  609301 609302  724201 726702
[10] 963801  963802 1001501 1001502 1417401 1417402 1497002 1540301 1540302
[19] 1550302
[1] 3rd child<2nd child - noc: 11
[1] Cases ID: 90001 322402 390001  609301 609302 963801  963802  1001501
[10] 1001502  1550301 1897001
[1] 4th child<3rd child - noc: 5
[1] Cases ID: 143401  322401  528002  609301  609302
[1] ____________________________________________
```

2.6 Computation of decimal dates and ages

A generic date (ydate,mdate) is transformed in a continuous expression through the formula

$$date\_event = ydate - 1900 + \frac{mdate - 0.5}{2}$$

A date is pointed to the middle of the specified month *mdate*. The correspondent age is computed as:

$$age\_event = date\_event - date\_birth$$

where *date_birth* is the decimal date of birth.

BOX 4. The `dataset` function

The function **`dataset()`** prepares data for the estimation of age profiles. In details, it loads the initial data set (filename), checks for missing dates, detects inconsistent dates, inputs missing months and computes decimal dates, ages and status variables. The output is a data frame that is ready to be processed by the function `ageprof()` (see below)
The syntax is

```
dataset(filename)
```

An example of application:

```
> d<-dataset("ITALY.dat")
[1] Dataset extracted from ITALY.dat is ready.
```

3. Transition-specific data matrix

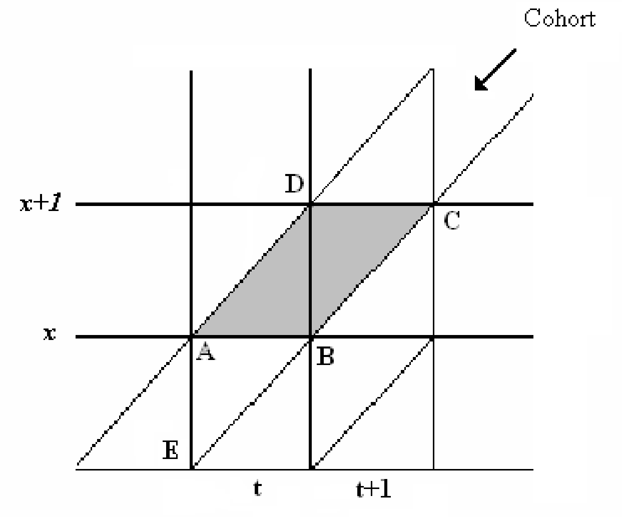
At this stage we have all the relevant data at the individual level. Using them, our aim is to create a data matrix containing, for any combination of covariates, the number of events experienced by individuals in their windows of observation at each age and their exposure time. In order to do so, we have to specify the type of rates, episode and window of observation considered, the time varying covariates retained and some addtionnal computation criteria. From this point onward, the procedure is transition-specific, i.e. it has to be repeated for each transition.

3.1 Cohort-period rates and cohort-age rates

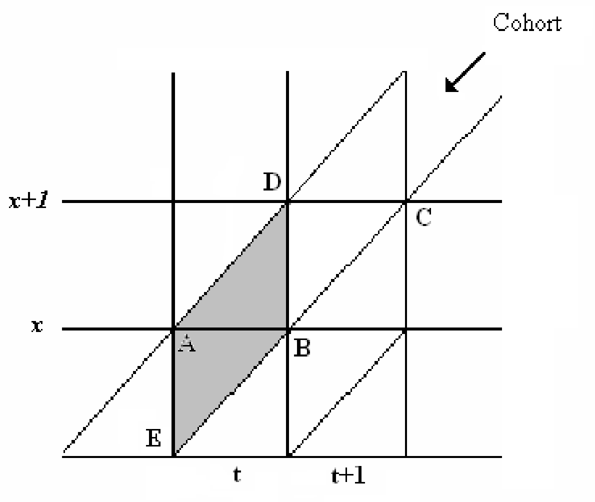
The first point that we have to fix is the kind of rates we want to estimate. In demographic analysis there are basically three kinds of rates, depending on how events are classified: 1) period-age, 2) cohort-age, and 3) cohort-period rates. Given that we refer to retrospective data, which are strictly related to a specific cohort, we have no interest in period-age rates. Cohort-age rates (figure 1a) are the best choice in order to define age profiles: they relate to events that occurred to a specific cohort at age x (between the x-th and the x+1-th birthday). Cohort-period rates (figure 1b) take into account events occurred to a specific cohort during the t-th calendar year, then, referring to two different years of age $x-1$ and x. It is well known in the literature that the latter are the best choice when rates are used in demographic projections. MAPLES can estimate age profiles using both kinds of rates. In the first case (cohort-age rates), the time scale is based on the individual age (episodes are defined by ages at different events) whereas, in the second case (cohort-period rates), the time scale is based on calendar time (episodes are defined by dates of different events). Given that an age profile is described as a vector of rates at different ages, the generic cohort-period rate at time t (covering age $x-1$ and x) is referred to as the rate at age x.

Fig. 1 Area of interest in the Lexis diagram according to the kind of transition rate

a. Cohort-age rate



b. Cohort-period rate



3.2 Window of observation and episodes

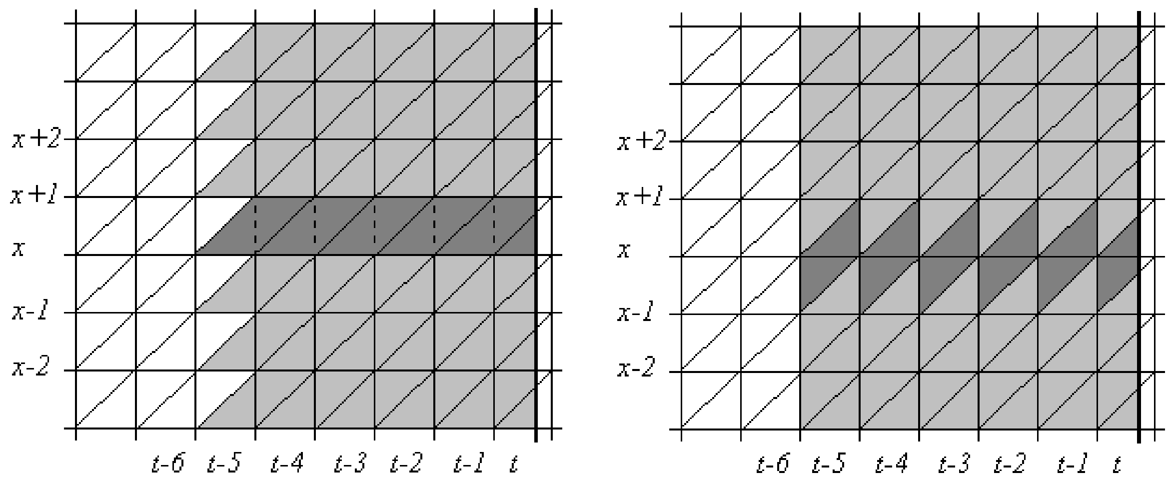
Here, information in the living arrangement and fertility fields is collected through surveys based on respondents aged at least 18 years at the interview. This is consistent with the dynamics of such behaviors in contemporary Europe (see, e.g., Billari et al., 2005). Given that the focus of MAPLES is the production of age profiles to be used for forecasting purposes, we should refer to recent behaviors. A plausible period could be the last five years before the interview. In general we may refer to a period of *wl* years. Therefore our window of observation is the time interval:

(trunc(*date_int*) – *wl, date_int*)	for cohort-period rates
(ceiling((trunc(date_*int*) – *w-date_birth*)*, age_int*)	for cohort-age rates

where *date_int* and *age_int* are, respectively the decimal date and the age at the interview, *date_birth* is the decimal date at birth; the operator *trunc(x)* gives the integer part *x* and *ceiling(x)* returns the smallest integer not less than *x*; finally, *wl* is the window length.
As a general rule, we consider only the events experienced in this window. Taking *wl*=5, the window of observation in the Lexis diagram is the light gray area in figure 3a (cohort-age rates) and in 3b (cohort-period rates). Transition rate at age *x* is computed taking into consideration the black gray area.

Fig. 3. Window of observation in the Lexis diagram (window length=5 years) according to the kind of transition rates. Individuals are interviewed in a precise point in time during year t.

a. Cohort-age rate *b. Cohort-period rate*



We saw in section 2.1 and 2.2 that a generic transition TR*X* represents the passage from state *A* to state *B* caused by the experience of event *E*. We need to define the related episode for each individual *j*. Generally speaking, an episode starts in t_j^S (the point in time when the individual enters in state *A, i.e.* starts to be at risk of experiencing *E*) and ends in t_j^F (the point in time when *E*

occurs or when the observation is censored). For each transition the events that cause transitions or censoring are listed in table 4.
For a window of observation defined as the interval from $t_j^{WIN\_start}$ to $t_j^{INTERVIEW}$, we have that:

if $t_j^F <= t_j^{WIN\_start}$ episode is not considered
if $t_j^S > t_j^{WIN\_start}$ then $t_j^S = t_j^{WIN\_start}$

In other words, episodes are reduced to their intersection with the window of observation.

3.3 Time-varying variables

Life courses are usually segmented into domains of life that exist in parallel and generally interact. One of the most interesting aspects of MAPLES is the opportunity to consider time-varying covariates, i.e. variables that identify changing status throughout life course. Each domain may be divided further into discrete states of existence. The set of possible state space a person can occupy is known as the *state space*. The states are mutually exclusive (only one state can be occupied at a time) and exhaustive (at in any point of time each individuals must be in one of the states.
Given the dates included in the initial dataset it is possible to consider the following time varying covariates

Marital status (MAR):

a. Never married
b. First marriage
c. Second marriage.
d. Divorced or widowed

Own children ever born (CHI):

a. childless
b. one child
c. two children
d. three or more children.

Living arrangements (LIV):

a. Living in the parental home
b. Living alone or with other persons
c. With a partner

We assume that the parental home may be left only once (see, e.g., Matsuo and Willekens, 2003). We also suppose that a married individual lives with his/her partner.

Table 8. Combination of categories for each variable.

Available dates	Not available dates	Categories	Code	Number of categories
MAR (Marital Status)				
None	Fist marriage; divorce; death of spouse; second marriage	None	**0**	1
First marriage	Divorce; death of spouse; second marriage	1. Never married (a) 2.Ever married (b,c,d)	**1**	2
Fist marriage; divorce; death of spouse, second marriage	None	1.Never married (a) 2.First marriage (b) 3. Second marriage (c) 4. Divorced or widowed (d)	**2**	4
CHI (Own children ever born)				
None	First child; second child; third child	None	**0**	1
First child	Second; third child	1. Childless(a) 2. With children (b,c,d)	**1**	2
First child; second child	Third child	1. Childless (a) 2. One (b) 3. Two or more (c,d)	**2**	3
First child; second child; third child	None	1. Childless (a) 2. One (b) 3.Two (c) 4. Three or more (d)	**3**	4
LIV (Living arrangements)				
None	Exit, first union; union disruption; second union	None	**0**	1
Exit	First union; union disruption; second union	1. Parental home (a) 2. Exit (b,c)	**1**	2
Exit, first union	Union disruption; second union	1.Parental home (a) 2. Alone or with others (b) 3. First union (c)	**2**	3
Exit, first union; union disruption; second union	None	1. Parental home (a) 2. Alone or with others (b) 3. With a partner (c)	**3**	3
EDU (Education)				
None	Education	None	**0**	1
Education	-	1.Primary-Lower sec.(a,b) 2. Upper sec.-tertiary (c,d)	**1**	2
Education	-	1. Primary- Lower sec.(a,b) 2. Upper sec. (c) 3. Tertiary (d)	**2**	3
Education	-	1. Primary (a) 2. Lower sec.(b) 3. Upper sec.-tertiary (c,d)	**3**	3
Education	-	1. Primary (a) 2. Lower sec.(b) 3. Upper sec.(c) 4. Tertiary (d)	**4**	4

Each time-varying variable can be specified when a set of specific dates is at our disposal. Generally speaking, the level of detail of covariates depends on the dates included in the initial dataset. If all the dates are collected, covariates have the maximum number of categories; otherwise, limited information implies the aggregation of some categories. For example, considering the variable CHI, if we have only the date of the first child's birth but not the date of following births, we can distinguish between the childless period and the period with one or more children in the biography of an individual but we cannot differentiate between category b, c, and d. In table 8, we show a set of rules for each time-varying variable. Depending on available dates, we can distinguish several combinations of categories for each covariate, each one coded as an integer from 0 to 3.
Besides, it is also useful to specify combinations of categories for the time-fixed variable EDU. We will understand why in section 4.5 where we will refer again to the scheme in table 8.
Some covariates make no sense for specific transitions. For example, in TR1, MAR is constantly "never married" by definition. Table 9 shows for each transition which time-varying covariates are allowed.

Table 9. Allowed covariates for each transition

TRANSITION	Allowed covariates
TR1 never-married → married (1st marriage)	EDU, LIV, CHI
TR2 married (1st marriage)→ divorced	EDU,CHI
TR3 married (1st marriage)→ widowed	EDU,CHI
TR4 divorced→ married (2nd marriage)	EDU, CHI
TR5 widowed→ married (2nd marriage)	EDU, CHI
TR6 at parental home (never in union) → first union	EDU, CHI*
TR7 at parental home→ alone/with others (never in union)	EDU, CHI*
TR8 alone/ with others (never in union) → first union	EDU, CHI*
TR9 first union→ separated (after 1st union disruption)	EDU, MAR, CHI,
TR10 alone or with other persons (after the 1st union disruption)→ with a partner (2nd union)	EDU, MAR,CHI
TR11 childless → child	EDU, MAR, LIV
TR12 1 child →2 children	EDU, MAR, LIV
TR13 2 children → 3 children	EDU, MAR, LIV
TR14 3 children → 4 children	EDU, MAR, LIV

* "Own children ever born" is always coded in only two categories: "childless/with children".

The effect of a time-varying variable is modelled by "splitting" the individual episode at the point the change occurs (see Blossfeld and Rohwer, 2002). Each sub-episode which results from splitting is then characterized by a unique value of this variable. For example, let us consider the transition TR2 and an episode that ends with the divorce event. This episode may be described with the vector (t_j^S, t_j^F, 0, 1) where the first value is the starting time, the second is the final time and the last two values indicate that the *j*-th individual starts the episode with a status 0 (married, not divorced) and ends it with the status 1 (divorced). Now, we can imagine that at times t_j^{CH1} and t_j^{CH2} (where $t_j^S < t_j^{CH1} < t_j^{CH2} < t_j^F$) the *j*-th individual experienced respectively first and second child's birth. The original episode is thus split into the three sub-episodes: (t_j^S, t_j^{CH1}, 0, 0), (t_j^{CH1}, t_j^{CH2}, 0, 0) , and

(t_j^{CH2}, t_j^F , 0, 1). The covariate CHI is fixed at 0 (childless) in the first sub-episode, at 1 in the second (1 child) and at 2 (2 children) in the third.
In general, an episode is split according to all possible covariates allowed for the specified transition.

3.4 Events and exposure time

For age *x* varying from 0 to 100, let E_x be the total number of events experienced by all the individuals at age *x*, and PY_x be their total duration of exposure at the same age. The *transition rate* r_x is then the ratio between the number of events E_x and the amount of time spent in the initial state PY_x. In order to calculate it, we first compute E_x *and* PY_x for every age *x*.
Considering x_j^S and x_j^F the age at the beginning and at the end of the episode, we have seen in section 3.2 that the episode is included in the window of observation:

$$x_j^{WIN\_start} \leq x_j^S \leq x_j^F \leq x_j^{INTERVIEW}$$

Let us call *N* the number of episodes. Then for the *j*-th individual:

$$E_x = \sum_{j=1}^{N} E_{j,x}$$

$$PY_x = \sum_{j=1}^{N} PY_{j,x}$$

and

$$E_{j,x} = \begin{cases} 1 & \text{if } x_j^S < x < x_j^F \text{ and the transition occured at age x} \\ 0 & \text{otherwise} \end{cases}$$

$$PY_{j,x} = \begin{cases} 1 & \text{if } x_j^S < x < x_j^F \text{ and neither transition nor exit from observation are experienced at the age x} \\ \delta_{j,x} & \text{if } x_j^S < x < x_j^F \text{ and transition or exit from observation occured at the age x} \\ 0 & \text{if } x < x_j^S \ or \ x > x_j^F \end{cases}$$

where $\delta_{j,x}$ is the fraction of year spent in the initial state by the *j*-th individual at the exact age at which he experienced the event or the exit from observation[2]. For example, let us suppose that we are interested in the transition TR2 (married → divorced) and that the *j*-th individual's episode starts at age 41 and ends at age 42.31 with a divorce. At age 41, his contribution is 0 for event and 1 for exposure time. At age 42 he contributes with 1 event and with 0.31 years for exposure time.

[2] Fomulas and examples are valid not only for cohort-age rates but also for cohort-period rates under the assumption that the rate at time *t* (covering age *x-1* and *x*) is referred to as rate at age *x* (see fig. 1).

We can also include individual post-stratification weights w_j in the computation. The formulas become:

$$E_x = \sum_{j=1}^{N} E_{j,x} \cdot w_j$$

$$PY_x = \sum_{j=1}^{N} PY_{j,x} \cdot w_j$$

In order to take into account categorical covariates, it is sufficient to count events and exposure time separately for any allowed combination of their levels of categories. In other words, we select sub-intervals (defined for each combination of covariates levels) to which the previous calculations apply. The resulting data matrix will have one row for each combination of age and levels of covariates. For example, if we consider an age range from 15 to 49 (35 age classes) and four covariates (EDU: 4 levels; MAR: 4 levels; CHI: 4 levels; LIV: 3 levels), the matrix will have a number of rows equal to

$$35 \cdot 4 \cdot 4 \cdot 4 \cdot 3 = 6720$$

Rows with a zero exposure time are dropped from the matrix.

4. GAM models and transition rates

In the final step we use transition-specific data matrix as our new dataset: each row constitutes a case with specific values for events, exposure time and covariates (EDU, MAR, CHI, LIV). Transition rates are estimated by using Generalized Additive Models that gives both a smoothed age profile and the multiplicative effect of one or more covariates. Moreover, MAPLES removes the proportional assumption by estimating covariate effects separately for different sub-interval of ages. Finally, smoothing and tail-flattening procedures ensure the continuity of the final age profile. The independence assumption underlying the MicMac project permits to obtain transition rates for every possible combination of covariate levels.

4.1 Generalized Additive Models

If we consider the transition rate for a specific event as the dependent variable, we should model it as a function of age and a set of covariates. However, age profiles for a specific transition should never be considered as a linear function. Smoothing or graduating rates, or more specifically the age profile of rates, has been a traditional issue in various disciplines, including demography and actuarial science. Traditional approaches based on polynomials have been criticized in the literature for a long time, authors proposing to use spline functions as a solution (see, e.g., McNeil et al., 1977); recent developments include Smith et al. (2004) and, on age-specific fertility rates, Schmertmann (2003).

For our purpose the so-called *Generalized Additive Models* are a suitable solution (Hastie & Tibshirani, 1990; Chambers & Hastie, 1992; Hastie *et al*, 2001). They constitute a generalization of linear model where the dependent variable Y can be modeled as a sum of non-linear (smoother) functions.

The model structure is

$$g(\mu) = \beta_0 + f(age) + \sum_k \beta_k X_k \qquad (1)$$

where $\mu = E(Y)$; $g(.)$ is the link function; Y is the response variable (distributed as some exponential distributions); X_k is a generic covariate and β_k the corresponding parameter; β_0 is the intercept; $f(age)$ is the smoothing function of age.

Since transition rates at age x for a specific event are given by the ratio between number of events (*Events*) and the time of exposure (*Exp.time*), considering natural logarithm as link function, for each i-th row of data matrix[3] we can write:

$$\ln\left(\frac{Events_i}{Exp.time_i}\right) = \beta_0 + f(age_i) + \sum_k \beta_k X_{ki} + \varepsilon_i$$

where ε_i is a random error term. Then,

$$\ln(Events_i) = \ln(Exp.time_i) + \beta_0 + f(age_i) + \sum_k \beta_k X_{ki} + \varepsilon_i$$

[3] We remember that each row of the data matrix is given by a specific combination of age x and the levels of categorical covariates.

or, considering the expected value

$$\ln(E[Events]) = offset[\ln(Exp.time)] + \beta_0 + f(age) + \sum_k \beta_k X_{ki} \qquad (2)$$

where

Events ~ Poisson

It is important to underline that the term ln(*Exp.time*) has no coefficient to be estimated.
In our dataset, *Events* are calculated starting from individual weighted information. As a consequence, number of events and time of exposure are not integers. Since the *Poisson* distribution is defined only for integers, we need to round the number of weighted events. Empirical analyses (not shown here) suggest that this approximation appears acceptable.
The smoothing function *f* is a *piecewise cubic spline*, a curve made up of sections of cubic polynomial joined together so that they are continuous in value, as well as first and second derivatives. The points at which the sections join are known as the *knots* of the spline, that are placed at quantiles of the distribution of unique *x* values. The number of knots defines the *degree of smoothness* of the *f* (i.e. number of knots + 2). In order to avoid the choice of parameter, that is essentially arbitrary, the degree of smoothness is estimated by Generalized Cross Validation[4] (Wood, 2006).
Calling $\hat{y}$ the fitted values of this model, the transition rate will be estimated as

$$\hat{r} = \frac{\hat{y}}{Exp.time} \qquad (4)$$

4.2 Multiplicative effects of covariates

The effect of covariates is considered as a multiplicative change to be applied to the grand mean, i.e. to the mean risk for the whole sample. This is pursued by applying the “deviation coding” system that compares the mean of the dependent variable for a given level to the overall mean of the dependent variable. If we consider, for example, the categorical covariate *Education* with 4 levels, the deviation coding is accomplished by assigning value “1” to level 1 for the first comparison (because level 1 is the level to be compared to all others), to level 2 for the second comparison (because level 2 is to be compared to all others), and to level 3 for the third comparison (because level 3 is to be compared to all others). The value “-1” is assigned to level 4 for all three comparisons (because it is the level that is never compared to the other levels). The value “0” is assigned to all other levels (see table 10).
Given that the expected values of the dummies specified in such a way are always zero[5], we can obtain the baseline transition rate as:

---

[4] The way to control smoothness by altering the basis dimension, is to keep it fixed at a size a little larger than the one that could reasonably be necessary, but to control the model’s smoothness by adding a “wiggliness” penalty to the least squares fitting objective (penalized regression spline) (Wood, 2006). The *mgcv* R package contains a GAM implementation in which the degree of smoothness of model terms is estimated as part of fitting.

[5] More precisely, the expected values are zero if the number of cases is (approximately) the same for each level. In our analysis this condition is satisfied given the structure of our data-matrix (similar number of rows for each combination of levels of covariates).

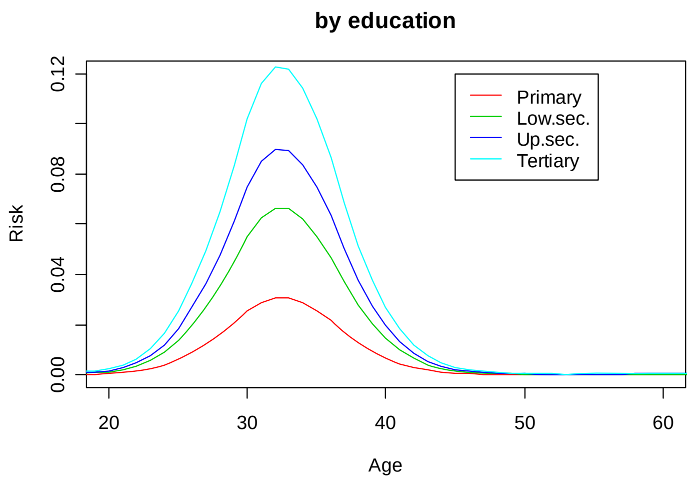
$$baseline_i = e^{\beta_0 + f(age_i)}$$

The estimated coefficients related to covariates express multiplicative changes to be applied at the baseline age profile in order to evaluate the estimated risk for each year of age. In other words, the effect of a covariate can be seen as a vertical shift throughout the whole range of age. For example, in fig. 4 the multiplicative effect of the level of education on an unspecified transition is shown.

Table 10. Deviation coding for level of education

EDU	Dummy 1 (Primary vs. mean)	Dummy 2 Low. sec. vs mean	Dummy 3 Upp. sec vs mean
Primary	1	0	0
Lower secondary	0	1	0
Upper secondary	0	0	1
Tertiary	-1	-1	-1

Fig. 4 Multiplicative effects of covariates estimated with additive model.

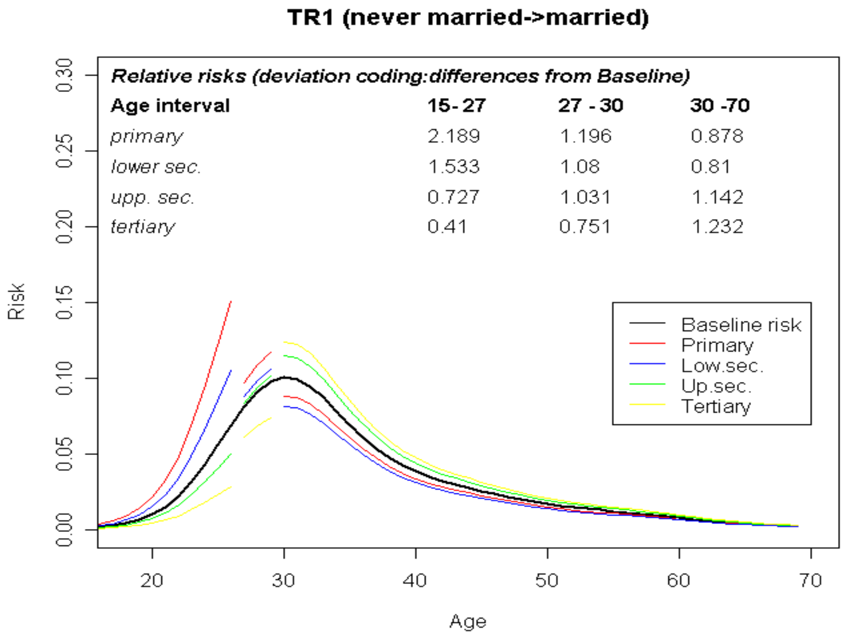


However, very often the effect of a covariate shows a combination of vertical and horizontal shifts. Therefore, the proportional assumption on the whole age rank appears too simplistic. MAPLES adopts the following solution: the multiplicative effect of a covariate is estimated separately within three different sub-intervals of ages delimited by two knots. These knots are fixed systematically at the 33rd and 67th percentiles of the event distribution (i.e. at the ages x_1 and x_2 at which, respectively, 33% and 67% of all the events are already experienced). In other words, each sub-interval contains one third of the total number of events.

With this new configuration, the model contains, other than the baseline transition rate, a set of dummy variables, one for each combination of independent variable and the three age sub-intervals. For example, the effect of education (with 4 levels) is estimated by including 12 dummy variables in the model equation.

In figure 5 we can see coefficient estimates and transition rates for the effect of EDU on transition TR1 (never married-married). Note that knots are computed at age 27 and 30.

Fig. 5 Proportional effects of education on the transition TR1.



4.3 Smoothing procedure

Transition rates for a sub-sample characterized by a specific value of covariates, result in non-continuous curves. The next step is the specification of a smoothing procedure that permits to obtain continuous curves which remain consistent with the estimated relative risks for each value of covariates and for each sub-interval of age.

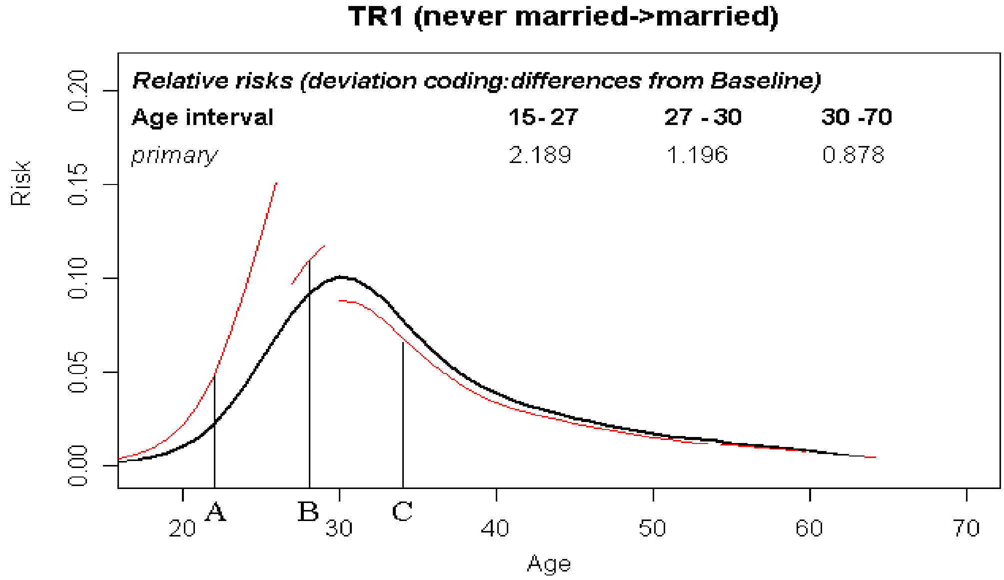
In order to do so, let us consider the interval of age that starts at the middle point of the first sub-interval (point *A* in figure 6: age at which about 16% of the events have been experienced) and ends at the middle point of the second sub-interval (point *B*: median age). At point *A*, the transition rate is the product of the baseline at *A* by the relative risk associated to the covariate level for the first sub-interval (β_1). At point *B* the transition rate is the baseline at *B* multiplied by the relative risk for the second sub-interval (β_2). When we proceed over the age axis from *A* to *B*, the continuous transition rate is obtained by multiplying the baseline by a weighted means of β_1 and β_2. The weight of β_1 is decreasing from a value close to 1 (at *A*) to a value close to 0 (at *B*) whereas the weight of β_2 is increasing in the opposite way. The trend of weights is not linear but follows a logistic curve. The same procedure can be applied to the interval (*B*, *C*).

In the example in fig. 6 we focus on the effect of primary level of education on the TR1 transition's risks (all the other effects are not shown). Age at point *A* is 22 years, and 28 years at point *B*. We have that:

$$r_A = baseline_A \cdot 2.189$$

$$r_B = baseline_B \cdot 1.196$$

Fig. 6. Mid-points fixed according to 16th, 50th and 66th percentiles.



For each age $x \in (A, B)$ the transition rate is

$$r_x = baseline_x * \left(2.189 * (1 - weight_x) + 1.189 * (weight_x)\right)$$

where *weight* follows a logistic curve and it is computed as follow:

$$weigth_x = \frac{1}{1 + Ke^{-h \cdot (x-A)}} \quad \text{for } x = (A+1) \text{ to } (B-1)$$

and

$$K = e^{\frac{(B-A)*h}{2}}$$

where *h* is the growth rate and it is computed as

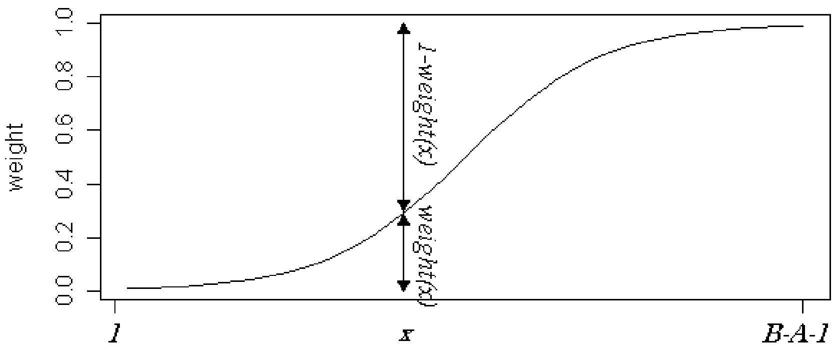
$$h = e^{\frac{5}{B-A}}$$

This means that *h* is equal to 1 when the length of the interval (*A*,*B*) is 5. In this way, the shape of the logistic curve remains the same independently from the interval's length. The resulting shape of is shown in fig. 7.

The same procedure could be applied to the second jump of the transition rate curve. Focusing on points *B* and *C* we have

$$r_B = baseline_B \cdot 1.196$$
$$r_C = baseline_C \cdot 0.878$$

Fig 7. Logistic curve with h=1 showing weights for a specific point x



For each age $x \in (B,C)$ the transition rate is

$$r_x = baseline_x * \left(1.189*(1-weight_x)+0.878*(weight_x)\right)$$

where

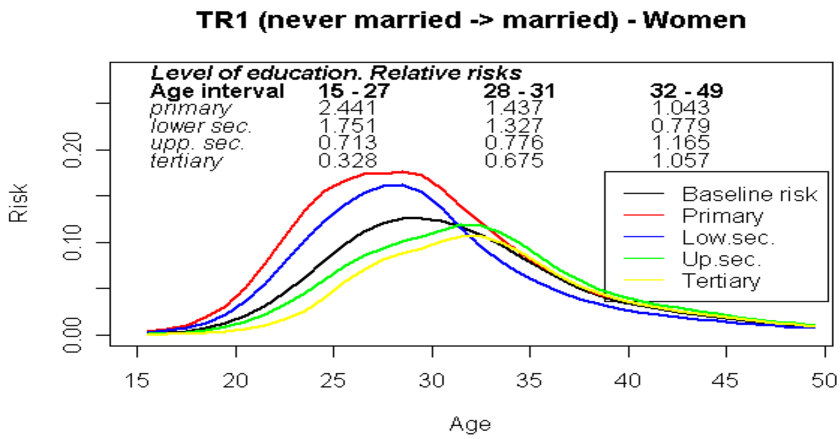
$$weigth_x = \frac{1}{1+Ke^{-h\cdot(x-B)}} \quad \text{for } x=(B+1) \text{ to } (C-1)$$

and

$$K = e^{\frac{(B-A)*h}{2}}.$$

This procedure may be repeated for all levels of covariates. The resulting smoothed curves appear as in figure 8.

Fig. 8 Smoothed curves



4.4 Tail-flattening procedure

Age profiles are obtained for the age interval (age_{min}, age_{max}). Working with retrospective data we can fix the limits respectively to 15 and 100 but we must face with non-zero exposure time age classes. Besides, data may be not available for the older classes when in a survey individuals older than a certain age have not been interviewed. Generally speaking we can define:

age_{min}: the lowest available age (≥15) with non zero exposure time
age_{max}: the highest available age (≤100) with non zero exposure time

By applying MAPLES procedure, we may have non-zero baseline risk at age_{min} and/or at age_{max}. Thus, if we can assume that outside (age_{min}, age_{max}) the baseline is zero, there are two jumps in the edges of the specified age interval. For example, in figure 9 we see two discontinuities in age_{min}=20 and age_{max}=63. MAPLES can avoid this situation by "flattening" the risk in the tails of the age profiles through the application of logistic weights to the baseline. Let us call *D* the age at which 5% of the events have been experienced, in the left tail the weights are:

$$weight_x = \frac{1}{1+Ke^{-h\cdot(x-age_{\min})}} \quad \text{for } x = age_{\min} \text{ to } (D-1)$$

where

$$K = e^{\frac{(D-age_{\min})*h}{2}}$$

and *h* is fixed arbitrarily to

$$h = e^{\frac{10}{B-A}}$$

If *E* is the age at which 95% of the events have been experienced, in the interval right tail the weight to be applied to baseline are:

$$weight_x = 1-\frac{1}{1+Ke^{-h\cdot(age_{\max}-x)}} \quad \text{for } x = (E+1) \text{ to } age_{\max}$$

In fig. 9 we can see the resulting flattened tails (in red). This procedure could also be useful in order to avoid odd values caused by few events.
Given that the effect of covariate is a multiplicative change to be applied to the baseline, age profiles for a specific level of one covariate will automatically flattened in the tails.
When the hypothesis that transition rates are zero outside the interval (age_{min}, age_{max}) is not applicable, it has no sense to flattens age profiles in one or in both tails. For example, for transition TR3 (1st marriage→death of spouse) rates are not decreasing at the older ages. In general, the tail-flattening procedure is optional and it can be excluded in one of the two tails or in both of them. In figure 10, the baseline risk has flattened left tail and non-flattened right tail. In this case, we do not know transition rates at the right of age_{max} and we need to complete the shape of age profiles for older ages using, for example, extrapolation methods.

Fig.9 Baseline with discontinuities (black line) and with flattened tails (red line). Rates are assumed to be zero outside the interval (*20, 63*).

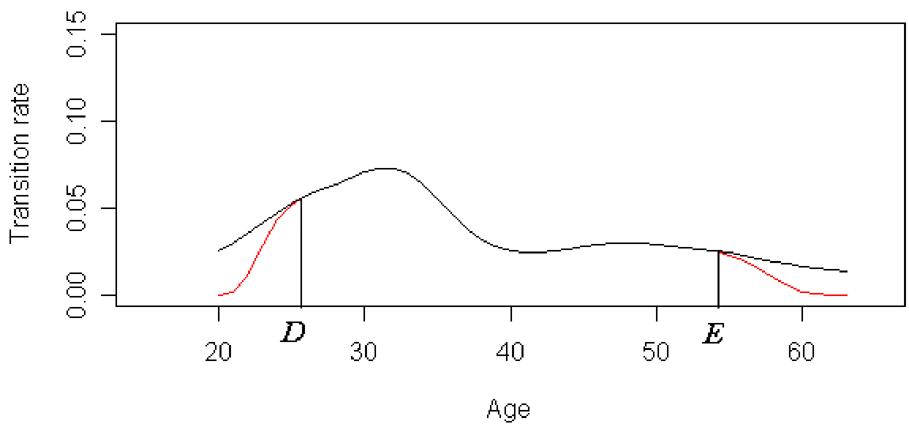
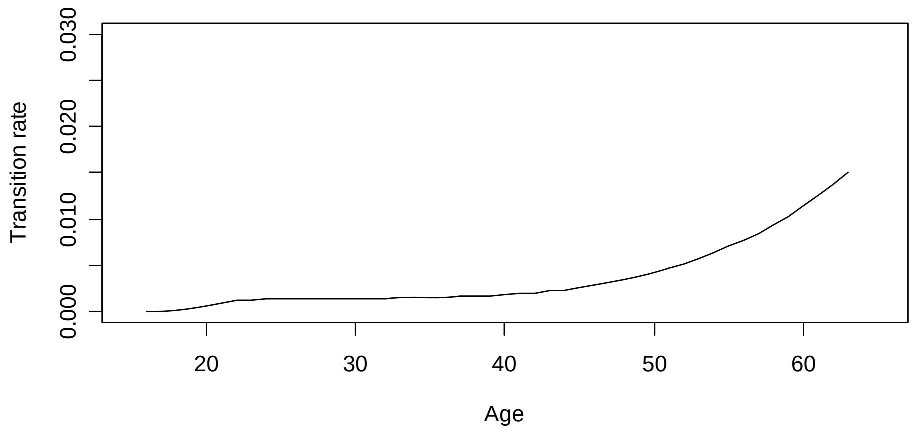


Fig.10 Baseline with flattened left and non-flattened right tail.



4.5 The MAPLES output

Estimates are calculated separately for men and women. Moreover, our approach is to introduce covariates (EDU, MAR, CHI, LIV) one by one under the independent hypothesis between couples of covariates. This assumption is common to the entire MicMac project. A single covariate, however, implies that in model equation (2) the number of included dummy variables (k) is equal to the number of levels multiplied by 3 (number of age subintervals).
The final stage of the procedure provides:

- a vector of ages within a selected age range;
- a vector containing the baseline age profile. It is obtained through the estimation of the baseline in a model without covariates (i.e. by fixing k=0 in the model equation 2);
- a set of vectors containing relative risks for each year of age and for each level of allowed covariates. For example, transition TR2 has a maximum of 4 vectors for EDU (one for each

level of education) and a maximum of 4 vectors for CHI (one for each number of children ever born). Data availability and low numbers of events may group levels and, therefore, may reduce the number of vectors. Relative risks for each year of age are computed as ratio between the smoothed transition rate (see section 2.3.4) and the relative baseline rate. An example, concerning transition TR1 in Italy, is reported in table 11.

As additional feature, MAPLES tests the statistical significance of the additional covariate *X* in the model by dropping it and noting the change in the deviance. The fitted models are compared using an analysis of deviance table. The tests are usually approximated, unless the models are un-penalized (Wood, 2006). Therefore, for each variable we have a *pvalue* relating to the comparison between base model (without covariates) and model with covariate *X*.

Table 11. Baseline and relative risks (TR1. Fss Italy 2003. Women)

age	baselin	prim	lowsec	uppsec	tert	noch	1+ch	par_hom	no_part	partner
15	3e-04	2.4896	1.7982	0.6402	0.3489	0.5977	1.6731	0.8793	0.5446	2.0882
16	9e-04	2.4896	1.7982	0.6402	0.3489	0.5977	1.6731	0.8793	0.5446	2.0882
17	0.0021	2.4896	1.7982	0.6402	0.3489	0.5977	1.6731	0.8793	0.5446	2.0882
18	0.0048	2.4896	1.7982	0.6402	0.3489	0.5977	1.6731	0.8793	0.5446	2.0882
19	0.0092	2.4896	1.7982	0.6402	0.3489	0.5977	1.6731	0.8793	0.5446	2.0882
20	0.0153	2.4896	1.7982	0.6402	0.3489	0.5977	1.6731	0.8793	0.5446	2.0882
21	0.0228	2.4896	1.7982	0.6402	0.3489	0.5977	1.6731	0.8793	0.5446	2.0882
22	0.0316	2.4019	1.7521	0.6601	0.3754	0.623	1.6276	0.9045	0.5476	2.0369
23	0.0423	2.2787	1.6875	0.688	0.4125	0.6585	1.5638	0.94	0.5518	1.9649
24	0.0555	2.0532	1.5691	0.7391	0.4806	0.7235	1.447	1.0049	0.5595	1.833
25	0.0711	1.77	1.4205	0.8032	0.566	0.8051	1.3003	1.0865	0.5692	1.6675
26	0.0873	1.5445	1.3022	0.8543	0.6341	0.8701	1.1834	1.1514	0.5769	1.5357
27	0.101	1.4213	1.2375	0.8822	0.6713	0.9056	1.1196	1.1869	0.5811	1.4637
28	0.1096	1.3336	1.1915	0.902	0.6977	0.9309	1.0742	1.2121	0.5841	1.4124
29	0.1127	1.2926	1.1683	0.9305	0.7293	0.9323	1.0727	1.2064	0.5923	1.4016
30	0.1114	1.235	1.1357	0.9705	0.7738	0.9341	1.0706	1.1983	0.6039	1.3865
31	0.1071	1.1295	1.076	1.0436	0.8552	0.9376	1.0667	1.1835	0.6251	1.3589
32	0.1001	0.9971	1.0011	1.1355	0.9573	0.9419	1.0618	1.1649	0.6517	1.3242
33	0.0901	0.8917	0.9415	1.2087	1.0387	0.9453	1.0579	1.1501	0.6728	1.2965
34	0.0771	0.8341	0.9089	1.2487	1.0831	0.9472	1.0558	1.142	0.6844	1.2814
35	0.0626	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
36	0.049	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
37	0.0382	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
38	0.0309	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
39	0.0269	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
40	0.0253	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
41	0.0255	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
42	0.0261	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
43	0.0258	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
44	0.0231	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
45	0.0182	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
46	0.0123	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
47	0.0074	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
48	0.004	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707
49	0.0021	0.7931	0.8857	1.2771	1.1148	0.9485	1.0543	1.1362	0.6926	1.2707

4.6 Rare transitions or few events in the dataset

Our effort in developing MAPLES is to take into account the greater number of transitions in the field of family and fertility. However, it is possible that for some transitions, the number of events is very low. This is more frequent when the dataset has a limited number of cases. With a small number of events, it is possible that relative risks could be biased. In order to control for such situations, we have introduced specific limitations. We may specify a number *nmin* in such a way that, for a generic transition TR*X* and for each sex:

1. the total number of events must be higher than *nmin*.

2. the number of events for each level *k* of a given covariate *X* and within each subinterval of age (defined by knots and containing at least one third of the total number of events) must be higher than *nmin/3* (this implies that the number of events for level *k* must be higher than *nmin*). In other words, considering a covariate *X* with *K* levels, we impose that

$$\text{events}(X = i \text{ and age.int} = j) >= nmin \quad \text{for } i = 1..K \text{ and } J = 1..3$$

The most extreme case is when condition 1 is not fulfilled: estimates can be hardly considered reliable. In this situation a possible solution may be to extend the observation window. When we increase the window length, we take into account longer segments of life and, therefore, more events. However, we refer to behaviors that are experienced in a more distant past.
When the total number of events is sufficiently high but for level *k* of covariate *X* the condition 2 is not satisfied, the strategy is to group level *k* with a nearby level. If condition 2 is still not satisfied when only two levels remain for *X*, the covariate is excluded from the analysis.
As an example, let us consider the situation depicted in table 12 (transition TR1, women). In case a. we have only level of education (EDU). This means that we do not have enough information to consider CHI whereas LIV is not allowed in TR1. If we fix *nmin*=30, condition 1 is satisfied given that the total amount of events are 297, but condition 2 is not satisfied for level "tertiary" because in the first age interval we have only 4 events (<*nmin*/3=10). This level is grouped with "uppsec" and variable EDU will have 3 levels ("primary", "lower secondary", and level 3 "uppsec+" given by the aggregation of "upper secondary" and "tertiary"). With this new configuration, condition 2 is always fulfilled.

Table 12. Number of events for the transition TR1.

Case a.

Number of events - WOMEN				
	int1	int2	int3	tot
prim	11	28	23	62
lowsec	43	57	30	130
uppsec	12	33	18	63
tert	4	20	18	42

Case b.

Number of events - WOMEN				
	int1	int2	int3	TOT
prim	10	6	6	22
lowsec	2	4	5	11
uppsec	7	6	0	13
tert	2	0	4	6
no ch	2	2	6	10
1+ ch	13	16	13	42

In case *b*, with the same value of *nmin*=30 condition 1 is satisfied (52 events) but both covariates (EDU and CHI) are excluded because there no enough events to justify at least two levels. In fact, for EDU if we group "tert" and "uppsec" we have 9, 6 and 4 events respectively in the first, second and third subinterval, condition 2 is never satisfied; if we group "tert","uppsec and "lowsec" together, condition 2 is not satisfied in the third interval. For CHI, condition 2 is not fulfilled for level "no ch".

The progressive aggregation of levels within each covariates follow the scheme presented in table 8: when condition 2 is not satisfied, MAPLES reduces the code number by one. As a consequence, we may have covariates with 2, 3, or 4 levels.
These checks on number of events permit to avoid age profiles estimated from very few events, which gives stability to the estimates.

BOX 5. The `ageprof()` function.

`ageprof()` is the main function in the MAPLES package. It computes age profiles for a specific transition and for a given data.frame.

The syntax is

```
ageprof(d,tr,wl=5,minage=15, maxage=100,cpa=T,outf=F,nmin=30
```

Arguments are:

Option `d`	`d` is the data.frame containing initial data (No default value). It must be prepared through the function `dataset()`
Option `tr`	Specifies which transition have to be studied. Allowed values: integer from 1 to 14 (No default value).
Option `wl`	Specifies the length of the observation window (number of years before the interview). Only events and exposure times referring to this window will be considered in the analysis. Allowed values: integer from 3 to 30 (default = 5)
Option `minage`	Defines the lower limit of age range to be considered (default = 15)
Option `maxage`	Defines the upper limit of age range to be considered (default = 100)
Option `outfile`	Creates a text file containing all the standard output (No default value).
Option `cpa`	Specifies the kind of transition rates. If `TRUE` cohort-period transition rates are computed; otherwise ageprof() computes cohort age transition rates (default = `TRUE`)
Option `outf`	`If TRUE`, creates a text file with standard output (default = `TRUE`)
Option `nmin`	Specifies the minimum number of events for each level of covariates (to be considered separately for each sex): a number of events lower than `nmin` causes the aggregation of proximate levels. The same effect is done if for each level and in each subinterval of age (defined by knots and containing at least one third of the total number of events) we have lower than `nmin/3` events. If the total amount of events (independently by levels of covariates) is lower than `nmin` a warning message appears in the standard output.
Option `lft`	If `TRUE` age profiles are flattened in the left tail of the age interval, i.e. before the age at which 5% of the events have been experienced (default= `TRUE`)
Option `rgt`	If `TRUE` age profiles are flattened in the right tail of the age interval, i.e. after the age at which 95% of the events have been experienced (default= `TRUE`)

The standard output of `ageprof()` is a list containing the following objects:

`$name`	String containing the name of the considered transition
`$minage`	value of parameter minage

`$maxage`	value of parameter maxage
`$outf`	value of parameter outf
`$cpa`	value of parameter cpa
`$nmin`	value of parameter nmin
`$lft`	value of parameter left
`$rgt`	value of parameter right
`$knot_m`	Vector of 2 elements containing knots (Men).
`$cov_m`	Matrix containing information about covariates (code as defined in table 8; number of allowed levels; pvalue: anova test that compares model without covariates and model with the specified covariate) (Men).
`$numev_m`	Matrix with number of events according to age sub-intervals and covariate categories (Men).
`$rrisk_f`	Baseline transition rates and relative risks for each levels of allowed covariates (Women).
`$knot_f`	Vector of 2 elements containing knots (Women).
`$cov_f`	Matrix containing information about covariates (code as defined in table 8; number of allowed levels; pvalue: anova test that compares model without covariates and model with the specified covariate) (Women).
`$numev_f`	Matrix with number of events according to age sub-intervals and covariate categories (Women).
`$rrisk_f`	Baseline transition rates and relative risks for each levels of allowed covariates (Women).

However, focusing on more recent events is crucial when we want to use rates for population forecasts. However, when we face transitions with few events, we can extend the length of the window of observation in order to gather more events and, then to obtain more stable estimates. The user can explicitly specify the value of `wl` (default value is 5 years).

It could also be useful to reduce the value of `nmin`. This may give the opportunity to have more covariates and/or less aggregated levels. However, a low the value for this parameter requires a stronger accuracy in the evaluation of the output. As a general rule, it is advisable to run ageprof with an high value of `nmin` (>=30) in order to have more stable estimates and only in second instance, try to reduce `nmin` and check if results remain similar to the previous ones.

NOTE: the automatic aggregation of categories may be excluded by setting `nmin`=1

BOX 6. `Plot.ageprof()` utility.

After the execution of `ageprof`, we can obtain a graphical representation of age profiles for a specified sex through the utility `plot.ageprof`. This command takes as main argument the standard output of `ageprof().` This utility takes into account the significance of covariates as well: when the *pvalue* of *anova* test between model without covariate and model with the specified covariate is higher than 0.05, curves are plotted in shaded gray. This permits to have an immediate glance on significant covariate.

The syntax is:

```
plot.ageprof<-function(tab,sex,edu=T,mar=T,chi=T,liv=T)
```

Arguments are:

Option `tab`	`tab` is a list containing the standard output of `ageprof()`(No default value).
Option `sex`	Specifies for which sex transition rates have to be plotted. (No default value).
Option `edu`	If `false` excludes plots for covariate "Level of education (EDU)"
Option `mar`	If `false` excludes plots for covariate "Marital status (MAR)"
Option `chi`	If `false` excludes plots for covariate "Own children ever born (CHI)"
Option `liv`	If `false` excludes plots for covariate "Living arrangements (LIV)"

4.7 Extension: combination of covariates

Let us call $r(x, c_1, c_2, c_3)$ the transition rate at age x for a specific transition TR*X,* for individuals with values c_1, c_2, c_3 respectively for covariates C_1, C_2, C_3.

Through the application of MAPLES we have for a given transition TR*X* and a given sex, a set of relative risks for each age x and for each level of covariates:

$$
\begin{array}{lll}
rrisk_{edu}(x, l_{edu}) & x: \ \min(x) \ to \ \max(x) & and \ l_{edu} = 1 \ to \ N_{edu} \\
rrisk_{mar}(x, l_{mar}) & x: \ \min(x) \ to \ \max(x) & and \ l_{mar} = 1 \ to \ N_{mar} \\
rrisk_{chi}(x, l_{chi}) & x: \ \min(x) \ to \ \max(x) & and \ l_{chi} = 1 \ to \ N_{chi} \\
rrisk_{liv}(x, l_{liv}) & x: \ \min(x) \ to \ \max(x) & and \ l_{liv} = 1 \ to \ N_{liv}
\end{array}
$$

where N_{edu}, N_{mar}, N_{chi} and N_{liv} are the number of level of the relative covariate.
These four sets are estimated in separated models. Given the hypothesis of independence between covariates, we can easily compute an age profile for every combination of levels of covariates. Generally speaking, transition rate at age x for individuals characterized by a specific combination is:

$$
r(x, l_{edu}, l_{mar}, l_{chi}, l_{liv}) = baseline(x) \cdot rrisk(x, l_{edu}) \cdot rrisk(x, l_{mar}) \cdot rrisk(x, l_{chi}) \cdot rrisk(x, l_{liv})
$$

where $baseline(x)$ is the baseline transition rate estimated in the model without covariates and expresses the grand mean of transition rates for all possible combinations of covariates.
For example, if we consider transition TR1 we have three possible covariates (EDU, CHI, and LIV) and a number of combination equal to 4*4*3=48 for each age x in the age range (e.g. from 15 to 49). Let us suppose that we want to know transition rates to first marriage for women aged x=30 with a tertiary level of education, childless and cohabiting. The application of MAPLES gives us the following rates (see section 5):

$$
\begin{array}{l}
baseline(x) = 0.1114 \\
rrisk_{edu}(x = 30, l_{edu} = "tertiary") = 0.7738 \\
rrisk_{chi}(x = 30, l_{chi} = "noch") = 0.9341 \\
rrisk_{liv}(x = 30, l_{liv} = "partner") = 1.3865
\end{array}
$$

The required rate is, then:

$$
\begin{array}{l}
r(x = 30, l_{edu} = "tertiary", l_{chi} = "noch", l_{liv} = "partner") = \\
\qquad = 0.1114 \cdot 0.7738 \cdot 1 \cdot 0.9341 \cdot 1.3865 = 0.1116419
\end{array}
$$

5. Age profiles in France

The French GGS dataset counts up 10,069 individual entries. It has been purposely organized for the study of individual trajectories, among others. It fits particularly well to the aim of calculating transitions, even if the number of cases can be too low on very precise transitions.
Each individual is interviewed on his familial events' precise history. The detailed date (month and year) is known for every transition. He gives notably the dates for his first departure from the parental home, the beginning and end of each union he lived (more than three months). The marriage date is specified when this one happened. We can deduce the periods during which he lives alone. Moreover, the birth dates of his own children are known, no matter whether they leaved home or not, and also, if concerned, the date of their departure home.

Table 13. Missing data in FSS-IT

```
> chkfile("frGGS.dat")
[1] _____________________________________________
[1] Check available data
[1] File frGGS.dat checked: OK
[1] _____________________________________________
```

Table 14 Transitions that can be analyzed with Italy FSS-IT

TR1 never-married → married (1^{st} marriage)
TR2 married (1^{st} marriage)→ divorced
TR3 married (1^{st} marriage)→ widowed
TR4 divorced→ married (2^{nd} marriage)
TR5 widowed→ married (2^{nd} marriage)
TR6 at parental home (never in union) → first union
TR7 at parental home→ alone/with others (never in union)
TR8 alone/ with others (never in union) → first union
TR9 first union→ separated (after 1^{st} union disruption)
TR10 alone or with other persons (after the 1^{st} union disruption)→ with a partner (2^{nd} union)
TR11 childless → child
TR12 1 child →2 children
TR13 2 children → 3 children
TR14 3 children → 4 children

Table 15. Consistency check on FSS-IT.

```
Consistency check. File:'frggs.dat'
[1] ___________________________________________
[1] exit from parental home<birth - noc: 1
[1] 1st union<birth+14 - noc: 2
[1] 2nd union<first union - noc: 1
[1] 1st child<birth + 14 - noc: 7
[1] ______________________________
```

TR1 (never married->1st marriage) - France

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
28 33

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0.05
MAR	0	1	NA
CHI	1	2	0.525
LIV	3	3	0

Number of events - MEN

	int1	int2	int3	tot
prim	9	7	10	26
lowsec	3	6	13	22
uppsec	41	72	48	161
tert	46	62	32	140
no_ch	86	104	53	243
1ch	12	27	30	69
2ch	0	15	13	28
3+ch	1	1	8	10
par_hom	6	3	0	9
no_part	88	129	78	295
1st_un	4	15	25	44
tot	99	147	103	349

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert	noch	1+ch	par_hom	no_part	1st_un
15	0	0.9184	0.7873	1.2033	0.9676	1.0427	0.9277	3.1585	1.6233
16	0	0.9174	0.7864	1.2019	0.9705	1.0459	0.8305	2.8275	1.4532
17	0	0.9181	0.787	1.2028	0.9738	1.0494	0.7409	2.5225	1.2965
18	2e-04	0.9222	0.7906	1.2083	0.9777	1.0535	0.6568	2.2362	1.1493
19	6e-04	0.9308	0.7979	1.2195	0.9822	1.0585	0.5783	1.9689	1.0119
20	0.0019	0.9432	0.8086	1.2358	0.9872	1.0638	0.5074	1.7277	0.888
21	0.0044	0.9575	0.8208	1.2545	0.9919	1.0689	0.447	1.5219	0.7822
22	0.0089	0.9701	0.8317	1.2711	0.9955	1.0727	0.3991	1.3588	0.6984
23	0.016	0.9775	0.838	1.2807	0.9972	1.0746	0.3646	1.2415	0.6381
24	0.0262	0.9766	0.8373	1.2796	0.9964	1.0738	0.3433	1.1687	0.6007
25	0.0383	0.9377	0.8577	1.2711	0.9964	1.0671	0.3293	1.125	0.5992
26	0.0505	0.8848	0.8776	1.2533	0.9952	1.0576	0.3239	1.1111	0.6185
27	0.0603	0.8105	0.911	1.2327	0.9952	1.0449	0.3216	1.111	0.6609
28	0.0662	0.7389	0.9419	1.2118	0.9952	1.0324	0.3214	1.1183	0.7096
29	0.0682	0.6913	0.957	1.1936	0.9941	1.0233	0.3223	1.1267	0.7449
30	0.0674	0.6574	0.9728	1.1846	0.9939	1.0168	0.3189	1.1194	0.7644
31	0.065	0.6664	0.9593	1.1855	0.9806	1.0291	0.2923	1.1345	0.8474
32	0.062	0.6792	0.961	1.1987	0.9731	1.0377	0.2679	1.1096	0.871
33	0.0587	0.701	0.9673	1.223	0.9628	1.0508	0.2353	1.0743	0.8999
34	0.0554	0.7299	0.9746	1.2548	0.9489	1.0675	0.1985	1.0378	0.937
35	0.052	0.7625	0.98	1.2891	0.9318	1.0859	0.1626	1.0066	0.9794
36	0.0485	0.7944	0.9827	1.3209	0.9136	1.103	0.1317	0.9835	1.0207
37	0.0447	0.8211	0.9827	1.3465	0.8968	1.1161	0.1082	0.969	1.0562
38	0.0409	0.8404	0.9808	1.3638	0.883	1.1247	0.0922	0.9628	1.0855
39	0.0371	0.852	0.9773	1.3729	0.8729	1.1297	0.0821	0.9638	1.1106
40	0.0336	0.864	0.9638	1.3766	0.8593	1.1409	0.0679	0.9843	1.1718
41	0.0303	0.8629	0.9626	1.3749	0.8588	1.1402	0.068	0.9866	1.1746
42	0.0272	0.8608	0.9602	1.3714	0.8597	1.1414	0.0683	0.9904	1.1791
43	0.0241	0.8583	0.9575	1.3675	0.8616	1.144	0.0685	0.993	1.1821

44	0.0211	0.8558	0.9547	1.3635	0.8642	1.1473	0.0685	0.9934	1.1826
45	0.0181	0.8531	0.9516	1.3592	0.8666	1.1506	0.0684	0.9926	1.1817
46	0.015	0.8498	0.9479	1.3539	0.8686	1.1533	0.0684	0.9923	1.1814
47	0.0121	0.8458	0.9434	1.3475	0.87	1.155	0.0686	0.9944	1.1838
48	0.0093	0.8412	0.9383	1.3402	0.8707	1.1561	0.0689	0.9997	1.1902
49	0.0068	0.8364	0.933	1.3326	0.8714	1.1569	0.0695	1.0084	1.2005
50	0.0047	0.8321	0.9282	1.3257	0.8724	1.1582	0.0703	1.0198	1.214
51	0.003	0.8286	0.9243	1.3202	0.8741	1.1605	0.0712	1.0327	1.2294
52	0.0018	0.8263	0.9217	1.3165	0.8768	1.1641	0.0721	1.0464	1.2457
53	0.001	0.8247	0.92	1.314	0.8802	1.1686	0.0731	1.0607	1.2627
54	5e-04	0.8234	0.9185	1.3118	0.884	1.1737	0.0742	1.0763	1.2814
55	2e-04	0.8214	0.9162	1.3086	0.8876	1.1784	0.0755	1.0947	1.3033
56	1e-04	0.818	0.9125	1.3033	0.8904	1.1822	0.077	1.1173	1.3301
57	0	0.8128	0.9067	1.2951	0.8922	1.1845	0.0789	1.145	1.3631
58	0	0.806	0.8991	1.2842	0.8928	1.1853	0.0812	1.1778	1.4021
59	0	0.798	0.8902	1.2715	0.8926	1.185	0.0838	1.2148	1.4462
60	0	0.7895	0.8807	1.2579	0.8919	1.1842	0.0865	1.2546	1.4935

Knots - WOMEN
25 29

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0.026
MAR	0	1	NA
CHI	2	3	0.112
LIV	0	1	NA

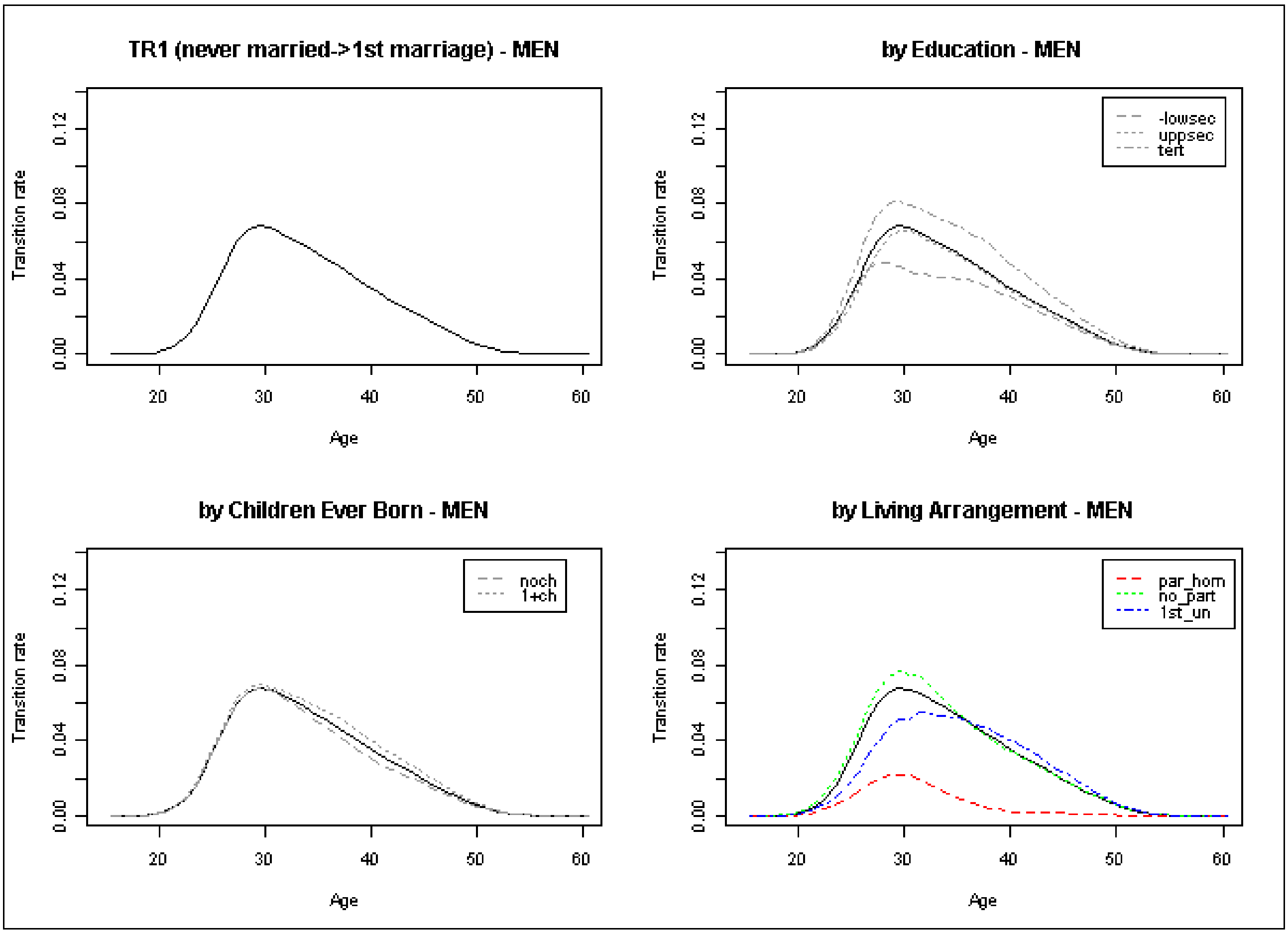
Number of events - WOMEN

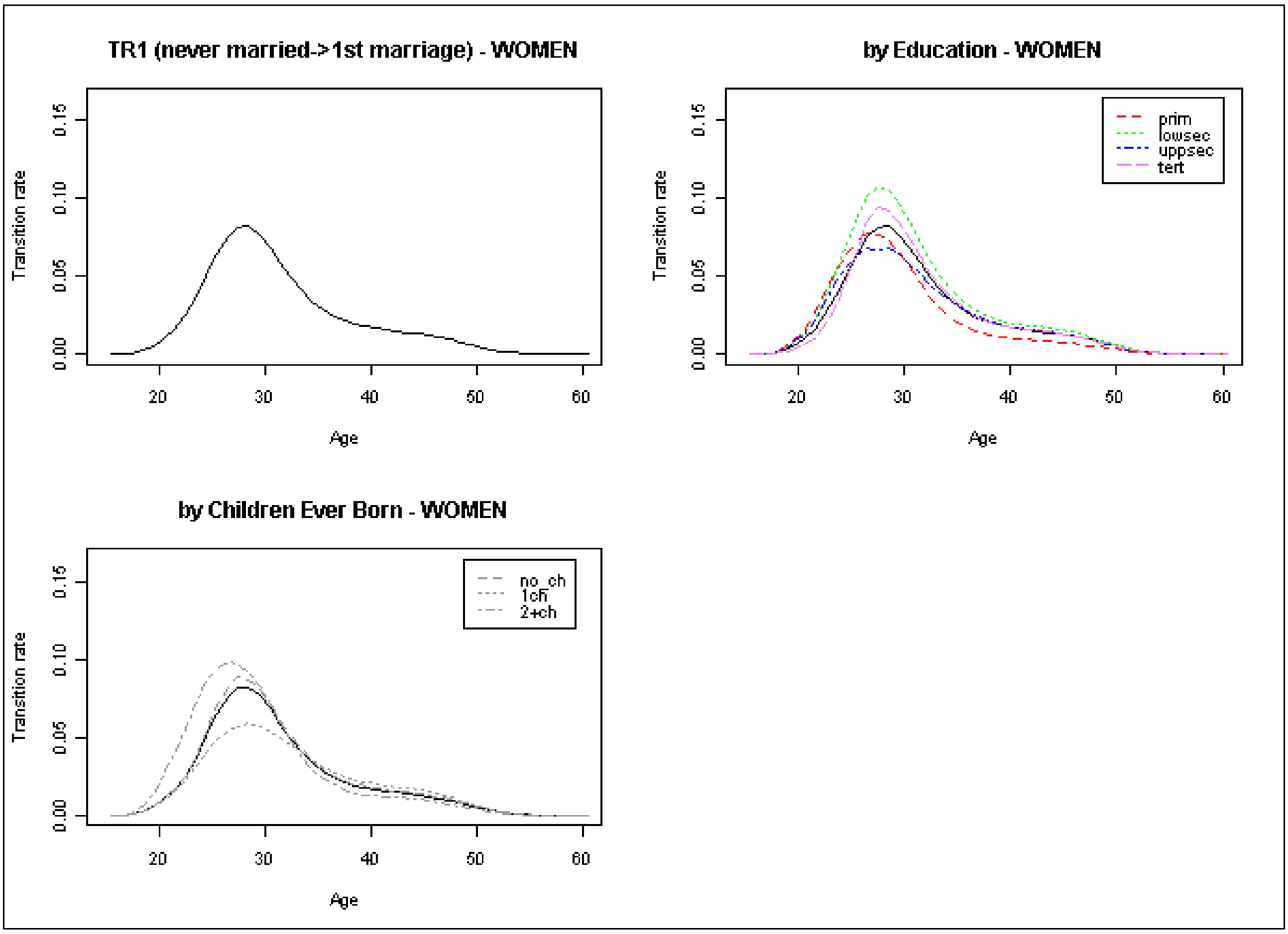
	int1	int2	int3	tot
prim	5	6	8	19
lowsec	3	4	6	13
uppsec	45	42	41	128
tert	25	84	46	155
no_ch	67	107	52	226
1ch	7	17	31	55
2ch	4	10	17	31
3+ch	1	2	1	4
par_hom	8	3	1	12
no_part	69	114	72	255
1st_un	2	20	28	50
tot	79	136	101	317

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	no_ch	1ch	2+ch
15	0	1.1571	1.0039	0.9839	0.4611	1.0066	0.974	2.4546
16	1e-04	1.2329	1.0698	1.0484	0.4914	1.0225	0.9894	2.4934
17	6e-04	1.311	1.1375	1.1148	0.5225	1.035	1.0015	2.5239
18	0.0025	1.3869	1.2034	1.1794	0.5527	1.0395	1.0059	2.535
19	0.0057	1.4553	1.2627	1.2375	0.58	1.0319	0.9985	2.5163
20	0.01	1.51	1.3101	1.284	0.6018	1.0099	0.9771	2.4626
21	0.0164	1.5462	1.3416	1.3148	0.6162	0.9742	0.9427	2.3757
22	0.0254	1.4983	1.367	1.2776	0.7002	0.9851	0.8968	2.1759
23	0.0372	1.4139	1.3774	1.2103	0.7951	0.9987	0.8462	1.9527
24	0.0509	1.2728	1.3802	1.097	0.9314	1.0399	0.7955	1.6894
25	0.0647	1.1262	1.371	0.9785	1.0544	1.0769	0.7503	1.4544
26	0.0757	1.0211	1.3472	0.8927	1.1162	1.0851	0.7146	1.2987
27	0.0818	0.9346	1.3195	0.8217	1.1545	1.0919	0.6888	1.1853
28	0.082	0.885	1.284	0.8314	1.1227	1.0614	0.7196	1.1181
29	0.0769	0.8503	1.2554	0.8324	1.0973	1.0471	0.7412	1.0819
30	0.0685	0.8148	1.2345	0.8463	1.0785	1.0414	0.7828	1.045
31	0.0586	0.7779	1.2209	0.8732	1.0658	1.0406	0.843	1.0029

32	0.0491	0.7407	1.213	0.9093	1.058	1.0415	0.9155	0.955
33	0.0406	0.7061	1.2089	0.9479	1.0535	1.0421	0.9893	0.9059
34	0.0338	0.6771	1.2065	0.982	1.0507	1.0417	1.0532	0.8619
35	0.0284	0.6549	1.2043	1.0074	1.0482	1.0402	1.1011	0.8271
36	0.0244	0.6389	1.2014	1.0237	1.0453	1.0381	1.1332	0.8021
37	0.0214	0.6139	1.1975	1.0502	1.0412	1.0319	1.1818	0.7599
38	0.0192	0.612	1.1938	1.047	1.038	1.0335	1.1835	0.761
39	0.0177	0.6104	1.1907	1.0443	1.0354	1.037	1.1875	0.7636
40	0.0166	0.6097	1.1892	1.043	1.034	1.0431	1.1946	0.7681
41	0.0158	0.6098	1.1896	1.0433	1.0343	1.0519	1.2046	0.7745
42	0.0149	0.6108	1.1915	1.0449	1.036	1.0622	1.2164	0.7822
43	0.0141	0.6122	1.1941	1.0472	1.0383	1.0725	1.2282	0.7897
44	0.0133	0.6133	1.1963	1.0492	1.0402	1.0808	1.2377	0.7958
45	0.0122	0.6136	1.1968	1.0497	1.0407	1.0856	1.2432	0.7993
46	0.0109	0.6126	1.195	1.048	1.039	1.0859	1.2435	0.7996
47	0.0094	0.6103	1.1904	1.044	1.0351	1.0817	1.2388	0.7965
48	0.0078	0.6068	1.1837	1.0381	1.0292	1.074	1.23	0.7909
49	0.0061	0.6027	1.1756	1.031	1.0222	1.0642	1.2187	0.7836
50	0.0044	0.5983	1.1671	1.0236	1.0149	1.0537	1.2067	0.7759
51	0.003	0.5942	1.1592	1.0166	1.0079	1.0438	1.1954	0.7686
52	0.0019	0.5906	1.152	1.0103	1.0017	1.035	1.1853	0.7621
53	0.0011	0.5871	1.1453	1.0044	0.9958	1.0271	1.1763	0.7563
54	6e-04	0.5836	1.1383	0.9983	0.9898	1.0195	1.1675	0.7507
55	3e-04	0.5794	1.1302	0.9912	0.9827	1.0111	1.1579	0.7445
56	2e-04	0.5742	1.1201	0.9823	0.9739	1.0011	1.1464	0.7371
57	1e-04	0.5678	1.1075	0.9713	0.963	0.9888	1.1324	0.7281
58	0	0.5602	1.0927	0.9583	0.9501	0.9745	1.1159	0.7175
59	0	0.5518	1.0764	0.944	0.936	0.9587	1.0979	0.7059
60	0	0.5432	1.0595	0.9292	0.9213	0.9423	1.0792	0.6939


TR1 (never married->1st marriage) - MEN
by Education - MEN
-lowsec
uppsec
tert
by Children Ever Born - MEN
noch
1+ch
by Living Arrangement - MEN
par_hom
no_part
1st_un
Transition rate
Age


TR1 (never married->1st marriage) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec
tert
by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
Age

TR2 (1st marriage->divorce) - France

Parameters
wl= 10 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 30 lft= TRUE rgt= TRUE

Knots - MEN
35 45

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0.739
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	7	10	12	29
lowsec	1	5	8	14
uppsec	30	32	17	79
tert	13	20	13	46
no_ch	18	24	4	46
1ch	17	12	6	35
2ch	9	19	13	41
3+ch	7	12	26	45
tot	51	68	50	168

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert
18	2e-04	0.9978	1.0739	0.7596
19	4e-04	1.0006	1.077	0.7618
20	0.0011	1.0034	1.08	0.764
21	0.0027	1.0063	1.0831	0.7662
22	0.0055	1.0092	1.0863	0.7684
23	0.0091	1.0122	1.0894	0.7706
24	0.0118	1.0152	1.0927	0.7729
25	0.0133	1.0182	1.0959	0.7752
26	0.0139	1.0213	1.0992	0.7775
27	0.0141	1.0243	1.1025	0.7799
28	0.0141	1.0274	1.1058	0.7822
29	0.014	1.0305	1.1091	0.7846
30	0.0139	1.0185	1.1017	0.8103
31	0.0138	1.0132	1.0991	0.8257
32	0.0136	1.0044	1.0939	0.8466
33	0.0134	0.9918	1.086	0.8734
34	0.0132	0.9762	1.076	0.9051
35	0.013	0.9593	1.0651	0.9389
36	0.0127	0.9436	1.0551	0.9711
37	0.0124	0.9309	1.0473	0.9989
38	0.012	0.922	1.0422	1.021
39	0.0117	0.9166	1.0397	1.0379
40	0.0113	0.9044	1.0324	1.0657
41	0.0109	0.9139	1.0141	1.09
42	0.0104	0.9197	1.0086	1.1024
43	0.01	0.9264	1.0001	1.1174
44	0.0095	0.9339	0.988	1.1356
45	0.009	0.9423	0.9721	1.1569
46	0.0085	0.9513	0.9532	1.1807
47	0.0079	0.9605	0.9322	1.2058
48	0.0074	0.9695	0.9108	1.2307
49	0.0069	0.9778	0.8907	1.2537

50	0.0064	0.985	0.8731	1.2738
51	0.0059	0.9909	0.8587	1.2904
52	0.0055	0.9957	0.8475	1.3035
53	0.005	0.9994	0.8391	1.3136
54	0.0046	1.0068	0.8173	1.3359
55	0.0043	1.0076	0.8179	1.337
56	0.0039	1.0084	0.8185	1.338
57	0.0036	1.0091	0.8191	1.339
58	0.0033	1.0098	0.8197	1.3399
59	0.0031	1.0105	0.8202	1.3408
60	0.0028	1.0112	0.8208	1.3418
61	0.0026	1.0119	0.8214	1.3427
62	0.0023	1.0126	0.822	1.3437
63	0.0021	1.0134	0.8226	1.3446
64	0.0019	1.0141	0.8231	1.3456
65	0.0017	1.0148	0.8237	1.3465
66	0.0015	1.0155	0.8243	1.3474
67	0.0012	1.0161	0.8248	1.3483
68	0.001	1.0168	0.8253	1.3492
69	8e-04	1.0174	0.8258	1.35
70	5e-04	1.018	0.8263	1.3508
71	4e-04	1.0186	0.8268	1.3516
72	2e-04	1.0192	0.8273	1.3523
73	1e-04	1.0197	0.8277	1.3531
74	1e-04	1.0203	0.8282	1.3538
75	0	1.0208	0.8286	1.3546
76	0	1.0214	0.8291	1.3553
77	0	1.0219	0.8295	1.356
78	0	1.0225	0.83	1.3568
79	0	1.0231	0.8304	1.3575

Knots - WOMEN
35 43

Covariates - WOMEN

	code	ncat	pvalue
EDU	1	2	0.059
MAR	0	1	NA
CHI	2	3	0.005
LIV	0	1	NA

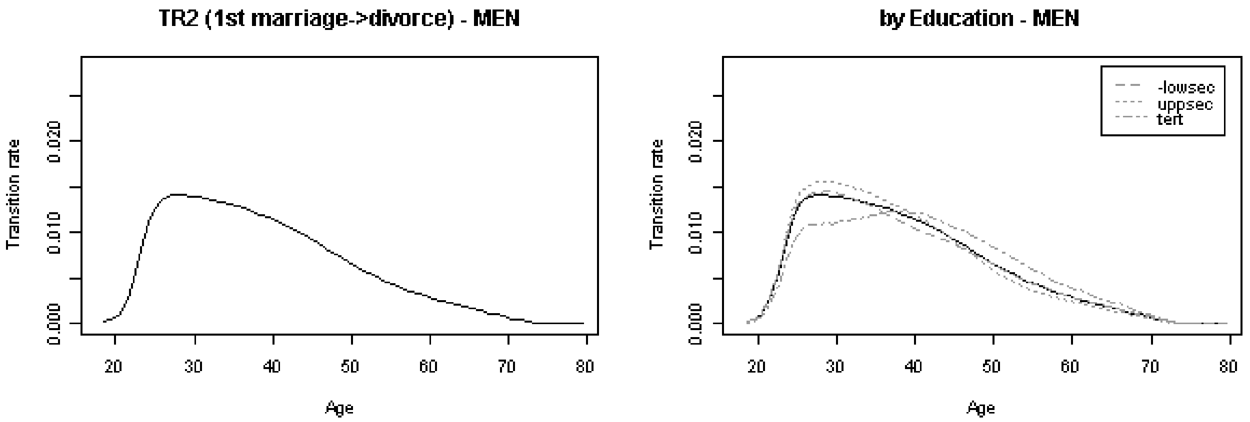
Number of events - WOMEN

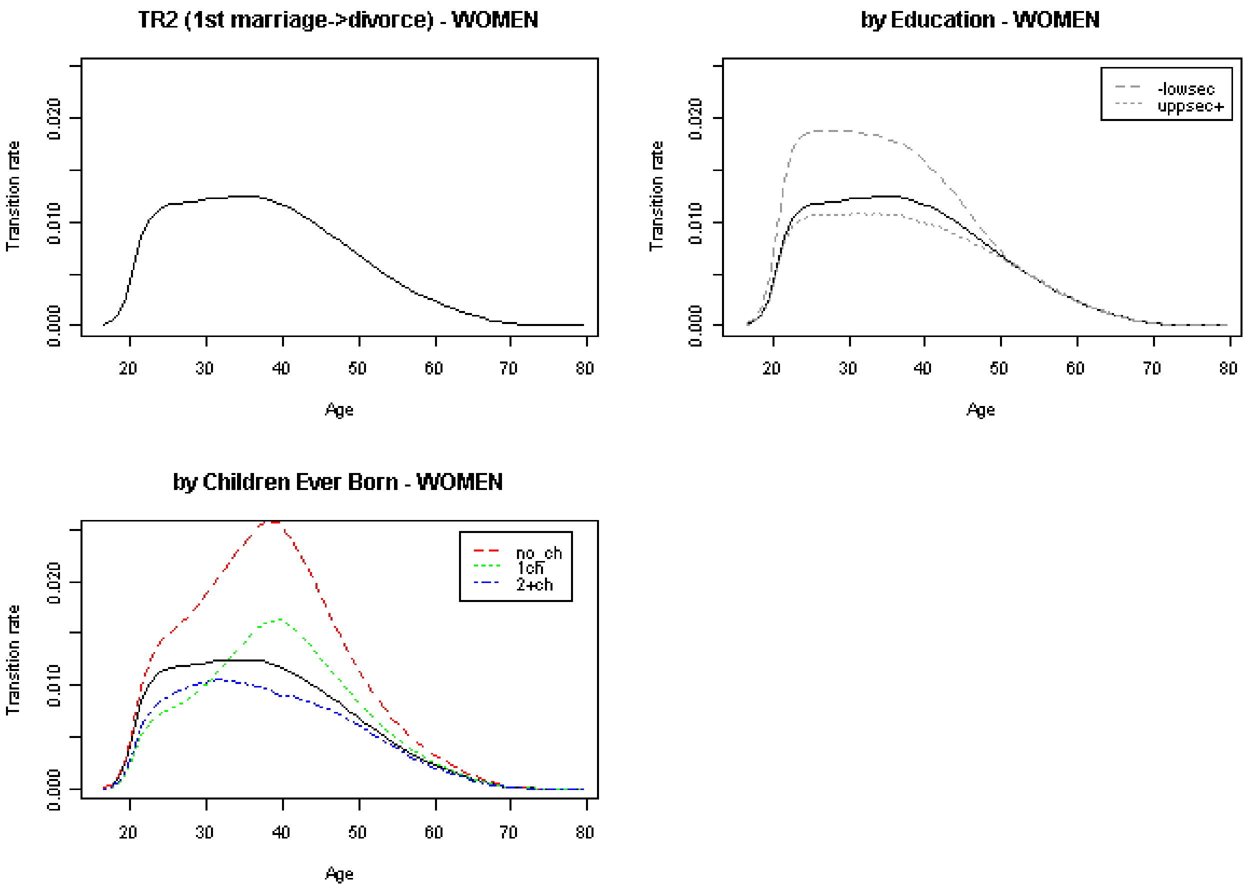
	int1	int2	int3	tot
prim	10	11	10	31
lowsec	7	18	19	44
uppsec	29	36	21	86
tert	19	10	18	47
no_ch	21	13	5	39
1ch	16	15	13	44
2ch	21	30	24	75
3+ch	7	16	24	47
tot	65	74	68	207

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec+	no_ch	1ch	2+ch
16	1e-04	1.6858	0.9569	0.9923	0.5128	0.5921
17	4e-04	1.6761	0.9513	1.0254	0.5299	0.6118
18	0.0011	1.6664	0.9459	1.0594	0.5475	0.6321
19	0.0028	1.6568	0.9404	1.094	0.5654	0.6528
20	0.0056	1.6473	0.935	1.1292	0.5836	0.6738
21	0.0085	1.6378	0.9296	1.1645	0.6018	0.6949
22	0.0103	1.6284	0.9243	1.2002	0.6203	0.7161

23	0.0111	1.6189	0.9189	1.2361	0.6389	0.7376
24	0.0115	1.6093	0.9135	1.2728	0.6578	0.7595
25	0.0117	1.5996	0.9079	1.3107	0.6774	0.7821
26	0.0118	1.5895	0.9022	1.3503	0.6978	0.8057
27	0.0119	1.579	0.8962	1.3923	0.7196	0.8308
28	0.012	1.5629	0.893	1.4525	0.7691	0.8296
29	0.0121	1.5488	0.888	1.5089	0.8082	0.843
30	0.0122	1.5333	0.8831	1.5722	0.8553	0.8515
31	0.0123	1.5163	0.8785	1.6425	0.9114	0.8537
32	0.0123	1.4978	0.8741	1.7191	0.976	0.8489
33	0.0124	1.4785	0.8698	1.7997	1.0466	0.8383
34	0.0124	1.459	0.8652	1.8804	1.119	0.8245
35	0.0124	1.44	0.8601	1.9568	1.1879	0.8107
36	0.0124	1.4219	0.8544	2.0249	1.2488	0.7992
37	0.0123	1.4051	0.8482	2.0818	1.2991	0.7909
38	0.0121	1.3895	0.8416	2.1256	1.3376	0.7851
39	0.0118	1.372	0.8366	2.1695	1.3878	0.7557
40	0.0115	1.3313	0.8518	2.1381	1.3866	0.7864
41	0.0112	1.3093	0.853	2.1232	1.3841	0.7968
42	0.0107	1.2849	0.8571	2.0941	1.3747	0.8069
43	0.0103	1.2579	0.8644	2.0522	1.3593	0.8174
44	0.0098	1.2281	0.8751	1.9996	1.3393	0.829
45	0.0093	1.1961	0.8887	1.9392	1.3161	0.8419
46	0.0087	1.1628	0.9045	1.8746	1.2913	0.8557
47	0.0082	1.1297	0.9214	1.8097	1.2663	0.8696
48	0.0076	1.0985	0.938	1.7479	1.2425	0.8826
49	0.0071	1.0705	0.9532	1.6921	1.2207	0.8936
50	0.0065	1.0465	0.9662	1.6435	1.2012	0.9022
51	0.006	1.027	0.9769	1.6024	1.184	0.908
52	0.0055	1.0117	0.9852	1.5682	1.169	0.9111
53	0.005	1	0.9916	1.5395	1.1554	0.9116
54	0.0045	0.9723	1.0117	1.4874	1.1372	0.9266
55	0.0041	0.9716	1.0111	1.4736	1.1266	0.918
56	0.0036	0.9714	1.0109	1.4591	1.1155	0.909
57	0.0032	0.9716	1.011	1.4435	1.1036	0.8992
58	0.0029	0.9721	1.0115	1.4266	1.0906	0.8887
59	0.0025	0.9728	1.0123	1.4083	1.0767	0.8774
60	0.0022	0.9738	1.0134	1.3888	1.0618	0.8652
61	0.0019	0.975	1.0146	1.3683	1.0461	0.8524
62	0.0016	0.9764	1.0161	1.3469	1.0297	0.8391
63	0.0014	0.978	1.0177	1.3249	1.0129	0.8254
64	0.0011	0.9797	1.0194	1.3025	0.9958	0.8114
65	9e-04	0.9814	1.0213	1.28	0.9786	0.7974
66	7e-04	0.9833	1.0232	1.2576	0.9614	0.7834
67	5e-04	0.9852	1.0252	1.2353	0.9444	0.7696
68	4e-04	0.9872	1.0273	1.2133	0.9276	0.7559
69	2e-04	0.9892	1.0294	1.1916	0.911	0.7423
70	2e-04	0.9913	1.0316	1.1702	0.8946	0.729
71	1e-04	0.9934	1.0337	1.149	0.8784	0.7158
72	1e-04	0.9955	1.0359	1.1281	0.8624	0.7028
73	0	0.9976	1.0381	1.1074	0.8466	0.6899
74	0	0.9997	1.0403	1.0869	0.831	0.6771
75	0	1.0019	1.0425	1.0667	0.8155	0.6645
76	0	1.004	1.0447	1.0467	0.8002	0.6521
77	0	1.0061	1.047	1.027	0.7851	0.6398
78	0	1.0082	1.0492	1.0075	0.7703	0.6277
79	0	1.0103	1.0514	0.9884	0.7557	0.6158


TR2 (1st marriage->divorce) - MEN
Transition rate
0.000
0.010
0.020
20
30
40
50
60
70
80
Age
by Education - MEN
-lowsec
uppsec
tert
Transition rate
0.000
0.010
0.020
20
30
40
50
60
70
80
Age


TR2 (1st marriage->divorce) - WOMEN
Transition rate
0.000
0.010
0.020
20
30
40
50
60
70
80
Age
by Education - WOMEN
-lowsec
uppsec+
Transition rate
0.000
0.010
0.020
20
30
40
50
60
70
80
Age
by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
0.000
0.010
0.020
20
30
40
50
60
70
80
Age

TR3 (1st marriage->death of spouse) - France

Parameters
wl= 10 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= FALSE

Knots - MEN
58 68

Covariates - MEN

	code	ncat	pvalue
EDU	1	2	0.654
MAR	0	1	NA
CHI	3	4	0.415
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	4	5	5	14
lowsec	3	7	7	17
uppsec	9	8	7	24
tert	6	6	3	15
no_ch	4	2	5	11
1ch	4	3	4	11
2ch	7	10	8	25
3+ch	7	12	5	24
tot	22	26	22	70

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec+	no_ch	1ch	2ch	3+ch
18	0	1.0935	1.0319	1.6443	0.8352	0.5577	0.7805
19	0	1.0909	1.0294	1.6594	0.8428	0.5629	0.7876
20	0	1.0882	1.0269	1.6746	0.8506	0.568	0.7949
21	1e-04	1.0856	1.0244	1.69	0.8584	0.5732	0.8022
22	1e-04	1.0829	1.0219	1.7055	0.8663	0.5785	0.8095
23	2e-04	1.0803	1.0195	1.7212	0.8742	0.5838	0.817
24	3e-04	1.0777	1.017	1.737	0.8823	0.5892	0.8245
25	5e-04	1.0751	1.0145	1.753	0.8904	0.5946	0.8321
26	6e-04	1.0724	1.012	1.7691	0.8986	0.6001	0.8398
27	7e-04	1.0698	1.0095	1.7854	0.9069	0.6056	0.8475
28	7e-04	1.0672	1.007	1.8019	0.9152	0.6112	0.8553
29	8e-04	1.0645	1.0046	1.8184	0.9236	0.6168	0.8631
30	8e-04	1.0619	1.0021	1.8349	0.932	0.6224	0.871
31	8e-04	1.0593	0.9996	1.8514	0.9404	0.628	0.8788
32	9e-04	1.0567	0.9972	1.8678	0.9487	0.6335	0.8866
33	9e-04	1.0541	0.9947	1.884	0.9569	0.639	0.8943
34	9e-04	1.0516	0.9923	1.8998	0.965	0.6444	0.9018
35	9e-04	1.0491	0.99	1.9153	0.9728	0.6497	0.9091
36	0.001	1.0467	0.9877	1.9303	0.9805	0.6548	0.9163
37	0.001	1.0443	0.9855	1.9447	0.9878	0.6596	0.9231
38	0.0011	1.0421	0.9834	1.9584	0.9947	0.6643	0.9296
39	0.0011	1.0399	0.9813	1.9714	1.0013	0.6687	0.9358
40	0.0011	1.0261	0.9919	1.919	0.9917	0.7177	0.9511
41	0.0012	1.0216	0.9927	1.9157	0.9939	0.7317	0.9586
42	0.0013	1.0167	0.9941	1.9088	0.995	0.7473	0.9662
43	0.0013	1.0113	0.9962	1.8978	0.9948	0.7647	0.9737
44	0.0014	1.0055	0.9989	1.8824	0.9933	0.7842	0.9813
45	0.0014	0.9992	1.0025	1.8624	0.9904	0.8059	0.9889
46	0.0015	0.9924	1.0068	1.8375	0.986	0.8298	0.9966
47	0.0016	0.9852	1.0118	1.808	0.9802	0.8557	1.0042
48	0.0017	0.9776	1.0177	1.7741	0.973	0.8835	1.0118
49	0.0018	0.9697	1.0241	1.7364	0.9645	0.9127	1.0191

50	0.0019	0.9617	1.0311	1.6956	0.955	0.9427	1.0262
51	0.002	0.9537	1.0385	1.6528	0.9446	0.9729	1.0328
52	0.0021	0.9459	1.0461	1.6091	0.9338	1.0025	1.0389
53	0.0023	0.9385	1.0537	1.5656	0.9227	1.031	1.0442
54	0.0025	0.9316	1.0612	1.5235	0.9117	1.0575	1.0488
55	0.0027	0.9254	1.0684	1.4835	0.9011	1.0818	1.0526
56	0.0029	0.92	1.0753	1.4464	0.891	1.1035	1.0557
57	0.0031	0.9153	1.0819	1.4127	0.8816	1.1225	1.058
58	0.0033	0.9115	1.088	1.3827	0.8731	1.1389	1.0598
59	0.0036	0.9086	1.0938	1.3564	0.8656	1.1528	1.061
60	0.0039	0.9064	1.0992	1.3336	0.859	1.1646	1.062
61	0.0043	0.905	1.1043	1.3143	0.8534	1.1745	1.0627
62	0.0047	0.9043	1.1092	1.2982	0.8487	1.1828	1.0634
63	0.0051	0.8947	1.1243	1.2312	0.8318	1.2272	1.072
64	0.0056	0.8889	1.1384	1.3256	0.8731	1.1903	1.0233
65	0.0061	0.8873	1.1472	1.3725	0.8937	1.1722	0.9994
66	0.0067	0.8843	1.1584	1.4381	0.9225	1.1476	0.9667
67	0.0073	0.8799	1.1724	1.5242	0.9606	1.116	0.9244
68	0.008	0.874	1.1888	1.629	1.0069	1.0779	0.8733
69	0.0087	0.8672	1.2068	1.7454	1.0585	1.036	0.8169
70	0.0096	0.8605	1.2251	1.8628	1.1106	0.9943	0.7606
71	0.0105	0.8548	1.2423	1.9703	1.1584	0.9568	0.7098
72	0.0114	0.8507	1.2576	2.0606	1.1987	0.9263	0.668
73	0.0125	0.8483	1.2705	2.1316	1.2306	0.9034	0.6364
74	0.0137	0.8475	1.2814	2.185	1.2548	0.8876	0.6139
75	0.0149	0.8424	1.2982	2.2878	1.3008	0.8532	0.5668
76	0.0163	0.8457	1.3033	2.2942	1.3045	0.8556	0.5684
77	0.0178	0.849	1.3085	2.3008	1.3082	0.8581	0.57
78	0.0194	0.8524	1.3136	2.3076	1.312	0.8606	0.5717
79	0.0211	0.8557	1.3188	2.3143	1.3159	0.8631	0.5733

Knots - WOMEN
56 66

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0
MAR	0	1	NA
CHI	3	4	0.069
LIV	0	1	NA

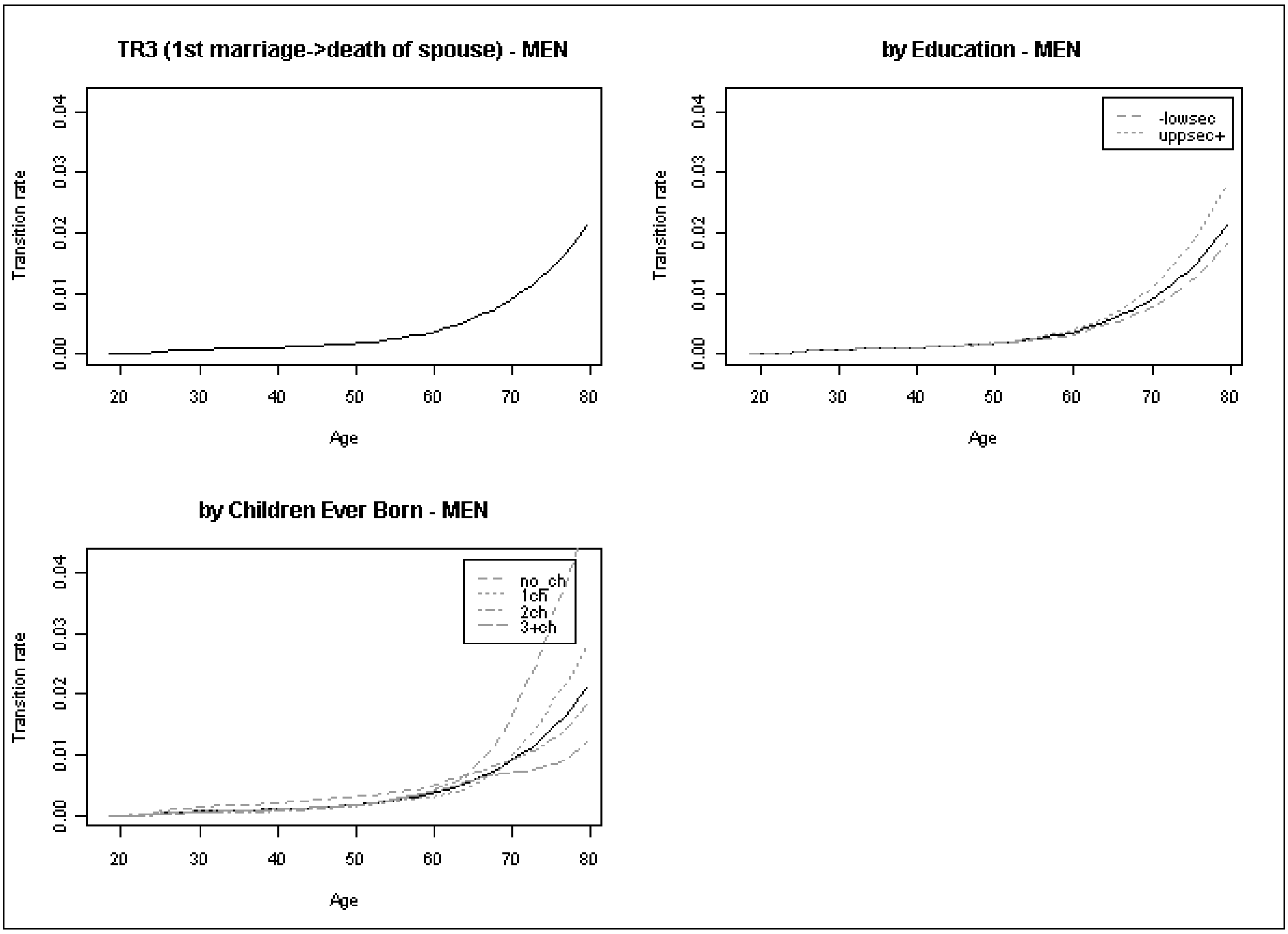
Number of events - WOMEN

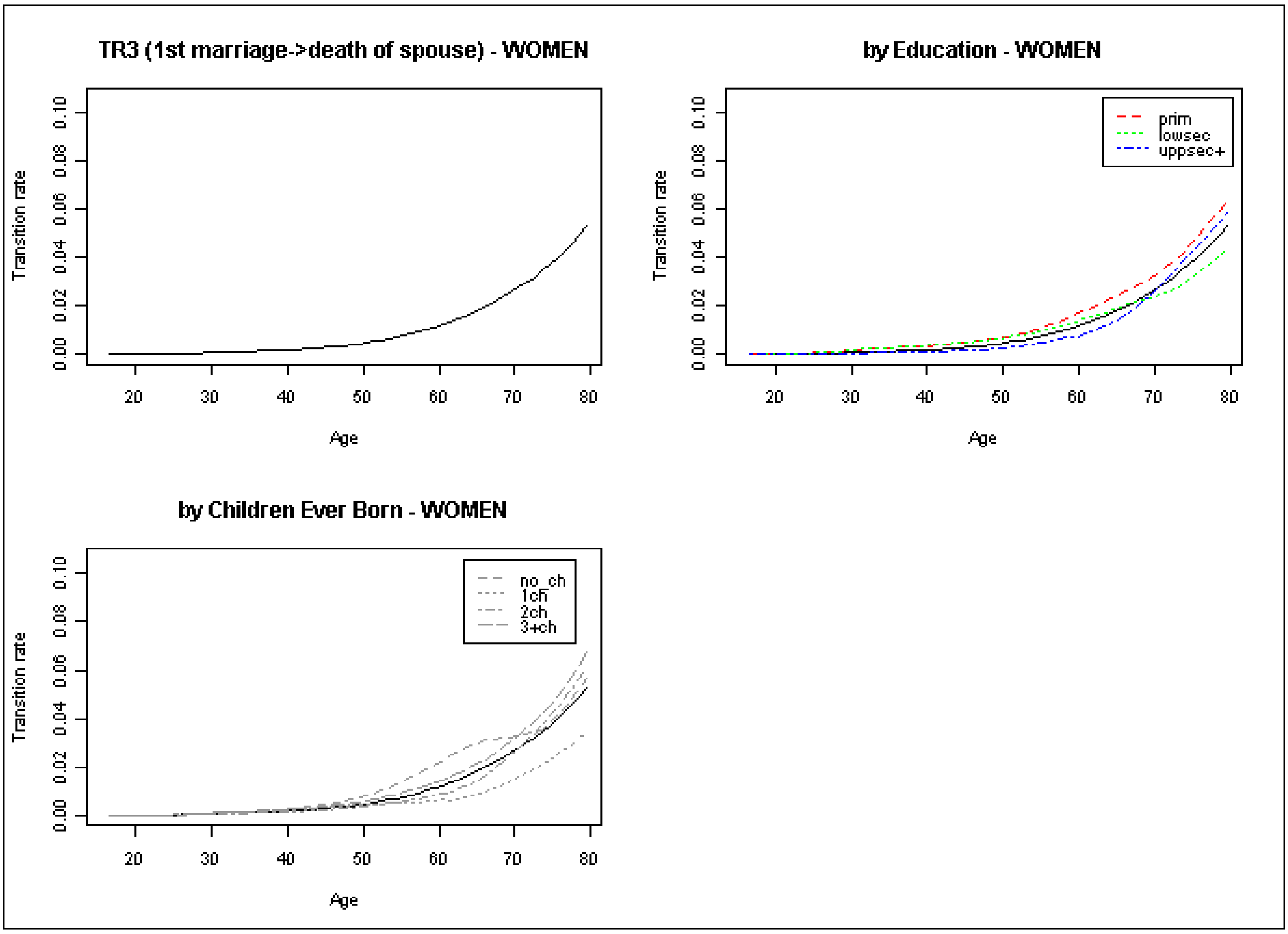
	int1	int2	int3	tot
prim	13	17	19	49
lowsec	18	30	24	72
uppsec	14	15	9	38
tert	5	1	2	8
no_ch	4	10	5	19
1ch	10	8	6	24
2ch	19	13	13	45
3+ch	17	32	29	78
tot	50	64	53	168

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+	no_ch	1ch	2ch	3+ch
16	0	2.8644	2.9575	0.8762	1.0865	1.0287	0.6292	0.9466
17	0	2.8125	2.9039	0.8603	1.1011	1.0426	0.6377	0.9593
18	0	2.7615	2.8512	0.8447	1.1159	1.0566	0.6463	0.9722
19	0	2.7114	2.7995	0.8293	1.131	1.0708	0.655	0.9853
20	0	2.6622	2.7488	0.8143	1.1462	1.0852	0.6638	0.9985
21	0	2.614	2.6989	0.7996	1.1615	1.0998	0.6727	1.0119
22	1e-04	2.5666	2.65	0.7851	1.1771	1.1145	0.6817	1.0255

23	1e-04	2.5201	2.602	0.7708	1.1927	1.1293	0.6907	1.0391
24	2e-04	2.4745	2.5549	0.7569	1.2084	1.1441	0.6998	1.0528
25	3e-04	2.4297	2.5087	0.7432	1.2241	1.159	0.7089	1.0665
26	4e-04	2.3857	2.4633	0.7297	1.2397	1.1738	0.718	1.0801
27	5e-04	2.3426	2.4188	0.7166	1.2552	1.1884	0.7269	1.0935
28	6e-04	2.3003	2.3751	0.7036	1.2704	1.2029	0.7357	1.1068
29	7e-04	2.2589	2.3323	0.6909	1.2853	1.217	0.7444	1.1198
30	9e-04	2.2182	2.2903	0.6785	1.2998	1.2307	0.7528	1.1324
31	0.001	2.1784	2.2492	0.6663	1.3138	1.2439	0.7609	1.1446
32	0.0011	2.1395	2.209	0.6544	1.3272	1.2566	0.7686	1.1563
33	0.0012	2.1014	2.1697	0.6428	1.3399	1.2686	0.776	1.1673
34	0.0013	2.0642	2.1313	0.6314	1.3518	1.2799	0.7828	1.1777
35	0.0014	2.028	2.0939	0.6203	1.3627	1.2903	0.7892	1.1872
36	0.0015	1.9927	2.0575	0.6095	1.3726	1.2996	0.7949	1.1959
37	0.0016	1.9584	2.0221	0.599	1.3813	1.3079	0.8	1.2034
38	0.0018	1.9252	1.9878	0.5889	1.3886	1.3148	0.8042	1.2098
39	0.0019	1.8931	1.9546	0.579	1.3943	1.3201	0.8075	1.2147
40	0.002	1.8621	1.9226	0.5696	1.3982	1.3238	0.8097	1.2181
41	0.0022	1.8323	1.8919	0.5605	1.4	1.3256	0.8108	1.2197
42	0.0024	1.7922	1.8194	0.5744	1.4806	1.261	0.8195	1.2419
43	0.0026	1.7621	1.7807	0.5718	1.4994	1.2413	0.8203	1.2455
44	0.0028	1.7328	1.7411	0.5707	1.5202	1.2156	0.8201	1.2482
45	0.0031	1.7043	1.7004	0.5714	1.5435	1.1834	0.819	1.25
46	0.0034	1.6765	1.6586	0.574	1.5695	1.1446	0.817	1.251
47	0.0037	1.6494	1.6157	0.5785	1.5982	1.0994	0.8141	1.2513
48	0.004	1.6232	1.5718	0.5847	1.6291	1.0486	0.8104	1.2509
49	0.0044	1.5978	1.5273	0.5925	1.6614	0.9932	0.806	1.2498
50	0.0048	1.5736	1.4828	0.6015	1.694	0.9349	0.8009	1.2478
51	0.0053	1.5505	1.4392	0.6111	1.7254	0.8756	0.7951	1.2448
52	0.0059	1.5288	1.3973	0.621	1.7542	0.8173	0.7887	1.2408
53	0.0065	1.5086	1.3579	0.6306	1.7792	0.7618	0.7819	1.2355
54	0.0071	1.4902	1.3217	0.6395	1.7995	0.7106	0.7747	1.2292
55	0.0078	1.4734	1.2892	0.6473	1.8149	0.6647	0.7673	1.2221
56	0.0086	1.4585	1.2606	0.6539	1.8257	0.6247	0.76	1.2143
57	0.0094	1.4453	1.2358	0.6592	1.8325	0.5904	0.753	1.2064
58	0.0104	1.4337	1.2147	0.6634	1.8362	0.5618	0.7465	1.1986
59	0.0113	1.4236	1.197	0.6666	1.8378	0.5383	0.7407	1.1915
60	0.0124	1.4151	1.1823	0.669	1.8383	0.5193	0.7357	1.1853
61	0.0135	1.4002	1.1419	0.6856	1.8897	0.4637	0.7374	1.1945
62	0.0147	1.3776	1.1093	0.7223	1.7957	0.4744	0.7646	1.187
63	0.016	1.3651	1.0922	0.7398	1.7476	0.4792	0.777	1.182
64	0.0174	1.3501	1.0703	0.7649	1.6871	0.4872	0.7966	1.1789
65	0.0188	1.332	1.043	0.7985	1.6121	0.4988	0.824	1.1776
66	0.0204	1.3113	1.0109	0.8397	1.524	0.5136	0.8584	1.1778
67	0.022	1.2892	0.976	0.8857	1.4282	0.5306	0.8976	1.1795
68	0.0238	1.2677	0.9416	0.9321	1.3335	0.5484	0.938	1.1826
69	0.0256	1.2488	0.9108	0.9746	1.2489	0.5653	0.9761	1.187
70	0.0276	1.2336	0.8857	1.0101	1.1803	0.5803	1.0095	1.1925
71	0.0297	1.2226	0.8669	1.0379	1.1295	0.5931	1.0373	1.1991
72	0.032	1.2152	0.8536	1.0586	1.0949	0.6037	1.0599	1.2067
73	0.0344	1.1985	0.8257	1.099	1.0171	0.6218	1.0997	1.2145
74	0.037	1.2003	0.8269	1.1006	1.0247	0.6264	1.1079	1.2236
75	0.0397	1.2021	0.8282	1.1023	1.0327	0.6313	1.1166	1.2331
76	0.0427	1.2039	0.8294	1.1039	1.041	0.6364	1.1255	1.243
77	0.0458	1.2056	0.8305	1.1054	1.0495	0.6416	1.1347	1.2532
78	0.0492	1.2073	0.8317	1.107	1.0582	0.6469	1.1441	1.2636
79	0.0529	1.2089	0.8329	1.1085	1.067	0.6523	1.1536	1.274


TR3 (1st marriage->death of spouse) - MEN
by Education - MEN
-lowsec
uppsec+
by Children Ever Born - MEN
no_ch
1ch
2ch
3+ch
Transition rate
Age
0.00
0.01
0.02
0.03
0.04
20
30
40
50
60
70
80


TR3 (1st marriage->death of spouse) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec+
by Children Ever Born - WOMEN
no_ch
1ch
2ch
3+ch
Transition rate
Age
0.00
0.02
0.04
0.06
0.08
0.10
20
30
40
50
60
70
80

TR4 (divorce->second marriage) - France

Parameters
wl= 20 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 30 lft= TRUE rgt= TRUE

Knots - MEN
40 49

Covariates - MEN

	code	ncat	pvalue
EDU	1	2	0.044
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	9	4	4	17
lowsec	5	6	11	22
uppsec	23	25	19	67
tert	10	15	12	37
no_ch	20	25	7	52
1ch	10	4	10	24
2ch	9	15	13	37
3+ch	7	7	16	30
tot	47	50	46	143

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec+
21	2e-04	0.0625	0.0453
22	6e-04	0.1313	0.0953
23	0.0016	0.267	0.1938
24	0.004	0.504	0.3658
25	0.0088	0.8465	0.6144
26	0.0152	1.2277	0.891
27	0.021	1.521	1.1039
28	0.0249	1.6288	1.1821
29	0.0275	1.556	1.1292
30	0.0294	1.3869	1.0065
31	0.0313	1.2117	0.8794
32	0.033	1.0843	0.7869
33	0.0349	1.0243	0.7434
34	0.0368	1.0037	0.7815
35	0.0386	1.0562	0.8548
36	0.04	1.1426	0.9764
37	0.0409	1.2283	1.1269
38	0.0411	1.27	1.2676
39	0.0406	1.2348	1.3478
40	0.0394	1.1218	1.3321
41	0.0376	0.962	1.2265
42	0.0356	0.798	1.0742
43	0.0335	0.6617	0.9258
44	0.0317	0.5537	0.8312
45	0.0303	0.5193	0.7596
46	0.0295	0.5227	0.7558
47	0.0291	0.5708	0.8126
48	0.0293	0.6652	0.9279
49	0.0299	0.8005	1.0895
50	0.0308	0.9553	1.2644
51	0.0318	1.0863	1.3966
52	0.0328	1.1438	1.43

53	0.0335	1.1038	1.3464
54	0.0336	0.9885	1.1816
55	0.0331	0.8494	0.9996
56	0.0319	0.7344	0.8543
57	0.0302	0.6776	0.7681
58	0.0281	0.6816	0.7727
59	0.0257	0.7702	0.8731
60	0.023	0.9636	1.0923
61	0.0205	1.2693	1.4388
62	0.018	1.6189	1.8351
63	0.0156	1.7952	2.0349
64	0.0133	1.5404	1.7461
65	0.011	0.9189	1.0416
66	0.0088	0.3519	0.3989
67	0.0067	0.0833	0.0945
68	0.0048	0.0124	0.014
69	0.0033	0.0012	0.0014
70	0.002	1e-04	1e-04
71	0.0012	0	0
72	7e-04	0	0
73	4e-04	0	0
74	2e-04	0	0
75	1e-04	0	0
76	0	0	0
77	0	0	0
78	0	0	0
79	0	0	0

Knots - WOMEN
37 45

Covariates - WOMEN

	code	ncat	pvalue
EDU	1	2	0.528
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

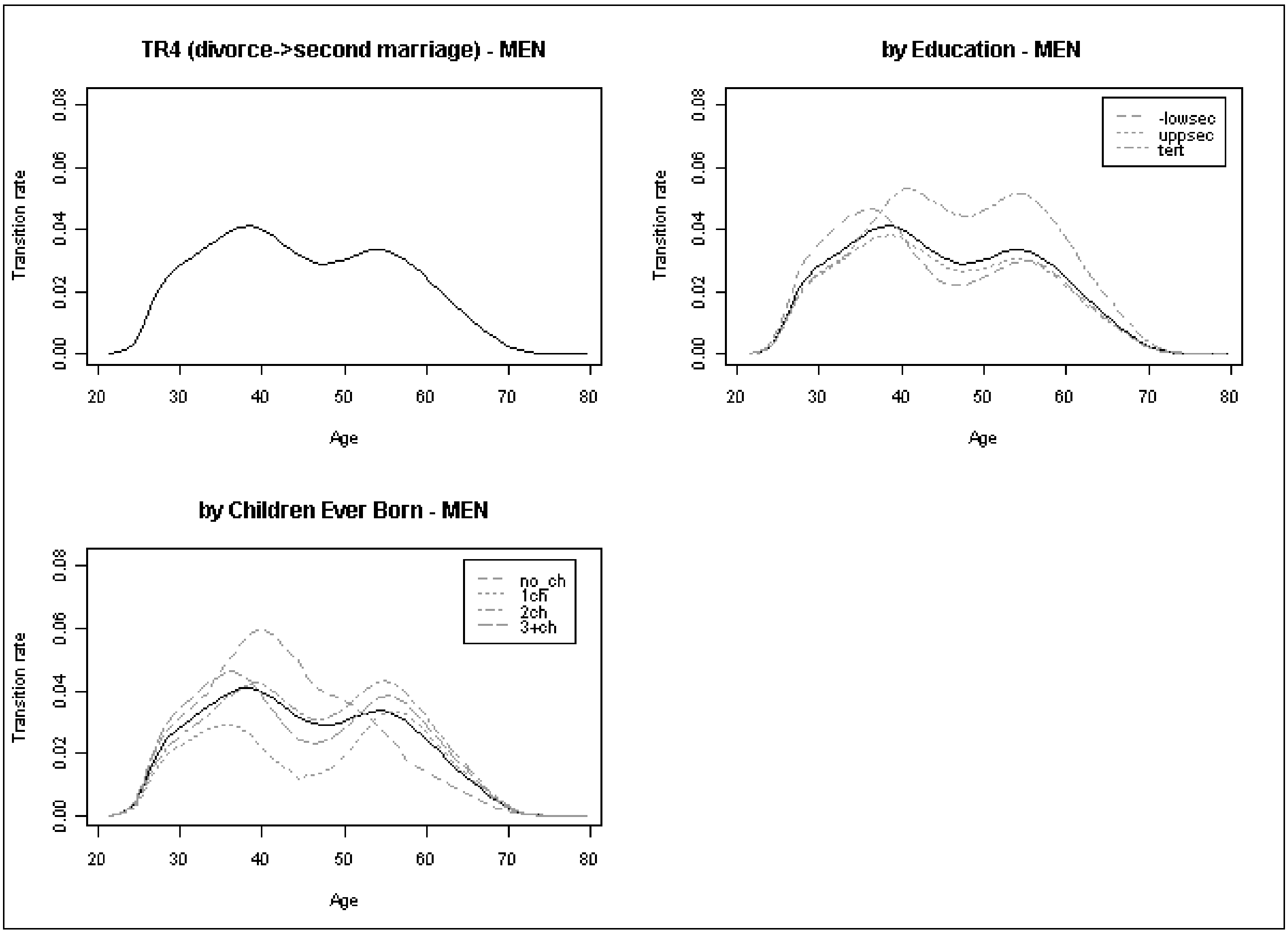
Number of events - WOMEN

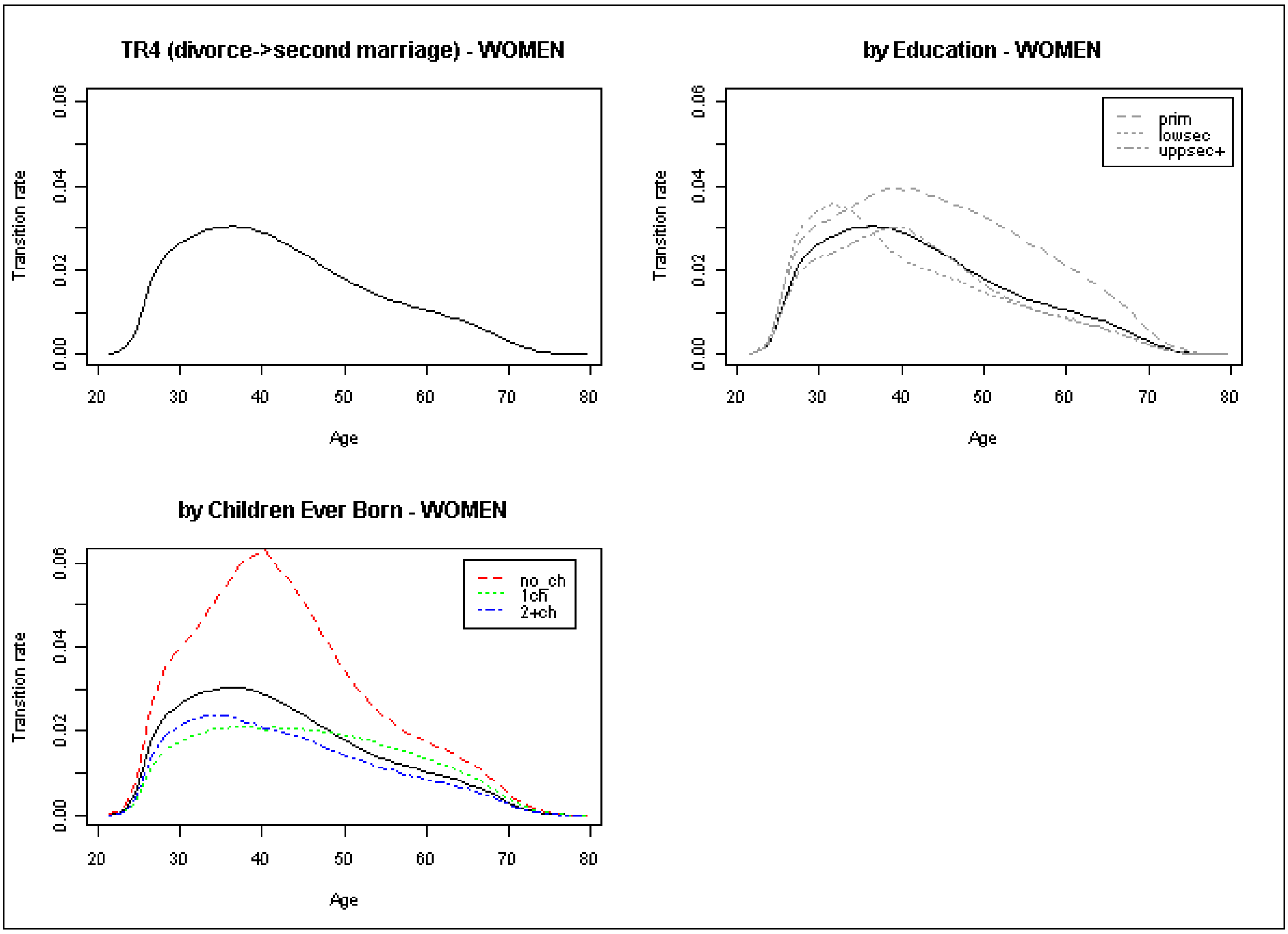
	int1	int2	int3	tot
prim	7	10	9	26
lowsec	10	12	9	31
uppsec	13	20	13	46
tert	7	16	5	28
no_ch	18	22	6	46
1ch	7	11	11	29
2ch	7	11	10	28
3+ch	6	13	9	28
tot	38	57	36	132

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec+
21	2e-04	1.2658	0.896
22	6e-04	1.2606	0.8923
23	0.0019	1.2555	0.8887
24	0.0051	1.2505	0.8852
25	0.0108	1.2455	0.8816
26	0.0171	1.2406	0.8782
27	0.0215	1.2359	0.8748
28	0.0241	1.2312	0.8715
29	0.0257	1.2267	0.8683
30	0.0271	1.2224	0.8652

31	0.0281	1.2182	0.8623
32	0.0289	1.1925	0.878
33	0.0296	1.1733	0.8886
34	0.0301	1.1468	0.9058
35	0.0303	1.1137	0.9292
36	0.0304	1.0781	0.9552
37	0.0303	1.046	0.9788
38	0.0299	1.0214	0.9968
39	0.0294	1.0047	1.0086
40	0.0287	0.9825	1.0259
41	0.0278	1.0002	1.0096
42	0.0268	1.0064	1.004
43	0.0257	1.0147	0.9971
44	0.0245	1.0254	0.9886
45	0.0233	1.0384	0.9784
46	0.0221	1.0535	0.9664
47	0.0209	1.0702	0.953
48	0.0197	1.0876	0.9385
49	0.0185	1.1047	0.9238
50	0.0174	1.1204	0.9095
51	0.0164	1.134	0.8962
52	0.0155	1.145	0.8843
53	0.0146	1.1532	0.8739
54	0.0138	1.1587	0.8649
55	0.0131	1.1619	0.8572
56	0.0125	1.1764	0.839
57	0.0119	1.1724	0.8361
58	0.0113	1.1682	0.8331
59	0.0107	1.1637	0.8299
60	0.0102	1.1591	0.8266
61	0.0097	1.1544	0.8232
62	0.0091	1.1496	0.8198
63	0.0086	1.1447	0.8164
64	0.0079	1.1398	0.8129
65	0.0072	1.1348	0.8093
66	0.0065	1.1298	0.8057
67	0.0056	1.1247	0.8021
68	0.0046	1.1195	0.7984
69	0.0036	1.1143	0.7947
70	0.0027	1.109	0.7909
71	0.0019	1.1037	0.7871
72	0.0013	1.0983	0.7833
73	8e-04	1.093	0.7795
74	5e-04	1.0877	0.7757
75	3e-04	1.0824	0.7719
76	2e-04	1.0772	0.7682
77	1e-04	1.072	0.7645
78	1e-04	1.0668	0.7608
79	0	1.0617	0.7572


TR4 (divorce->second marriage) - MEN
by Education - MEN
-lowsec
uppsec
tert
by Children Ever Born - MEN
no_ch
1ch
2ch
3+ch
Transition rate
Age
0.00
0.02
0.04
0.06
0.08
20
30
40
50
60
70
80


TR4 (divorce->second marriage) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec+
by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
Age
0.00
0.02
0.04
0.06
20
30
40
50
60
70
80

TR5 (death of spouse->2nd marriage) - France

Parameters
wl= 30 minage= 15   maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
41 57

Covariates - MEN

	code	ncat	pvalue
EDU	0	1	NA
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	1	1	1	3
lowsec	0	0	0	0
uppsec	3	3	1	7
tert	0	3	2	5
no_ch	3	0	0	3
1ch	1	1	0	2
2ch	0	3	1	4
3+ch	0	3	3	6
tot	4	7	4	15

Baseline and relative risks - MEN

age	baselin
26	0.0088
27	0.1001
28	0.1016
29	0.0953
30	0.0893
31	0.0838
32	0.0786
33	0.0737
34	0.0691
35	0.0648
36	0.0608
37	0.057
38	0.0535
39	0.0502
40	0.047
41	0.0441
42	0.0414
43	0.0388
44	0.0364
45	0.0341
46	0.032
47	0.03
48	0.0282
49	0.0264
50	0.0248
51	0.0232
52	0.0218
53	0.0204
54	0.0192
55	0.018
56	0.0169
57	0.0158

58	0.0148
59	0.0139
60	0.013
61	0.0122
62	0.0115
63	0.0108
64	0.0101
65	0.0095
66	0.0089
67	0.0083
68	0.0078
69	0.0073
70	0.0069
71	0.0064
72	0.006
73	0.0057
74	0.0053
75	0.005
76	0.0046
77	0.0034
78	9e-04
79	1e-04

Knots - WOMEN
44 52

Covariates - WOMEN

	code	ncat	pvalue
EDU	0	1	NA
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

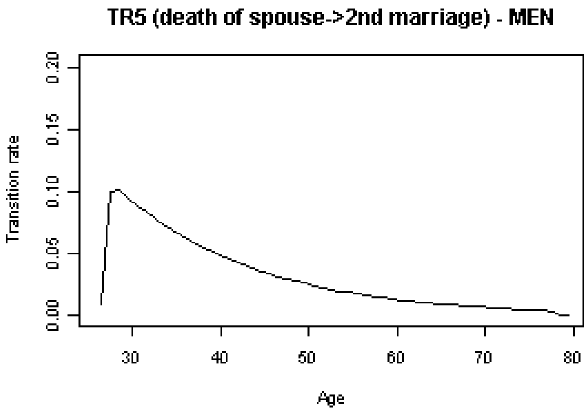
Number of events - WOMEN

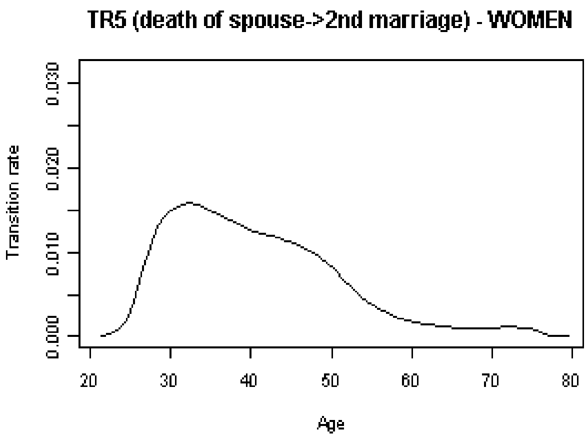
	int1	int2	int3	tot
prim	2	3	1	6
lowsec	2	6	1	9
uppsec	2	1	1	4
tert	0	0	1	1
no_ch	2	1	1	4
1ch	2	5	1	8
2ch	2	2	1	5
3+ch	1	3	1	5
tot	6	10	4	21

Baseline and relative risks - WOMEN

age	baselin
21	1e-04
22	3e-04
23	8e-04
24	0.0019
25	0.0041
26	0.0073
27	0.0106
28	0.0131
29	0.0146
30	0.0153
31	0.0157
32	0.0158
33	0.0156
34	0.0153
35	0.0148

36	0.0143
37	0.0138
38	0.0133
39	0.0129
40	0.0125
41	0.0122
42	0.0119
43	0.0117
44	0.0114
45	0.0111
46	0.0107
47	0.0102
48	0.0095
49	0.0087
50	0.0078
51	0.0068
52	0.0059
53	0.005
54	0.0042
55	0.0036
56	0.003
57	0.0025
58	0.0022
59	0.0019
60	0.0017
61	0.0015
62	0.0014
63	0.0013
64	0.0012
65	0.0011
66	0.0011
67	0.0011
68	0.0011
69	0.0011
70	0.0011
71	0.0012
72	0.0012
73	0.0011
74	0.001
75	7e-04
76	3e-04
77	1e-04
78	1e-04
79	0


TR5 (death of spouse->2nd marriage) - MEN
Transition rate
0.00
0.05
0.10
0.15
0.20
30
40
50
60
70
80
Age


TR5 (death of spouse->2nd marriage) - WOMEN
Transition rate
0.000
0.010
0.020
0.030
20
30
40
50
60
70
80
Age

TR6 (parental home->1st union) - France

Parameters
wl= 10 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 20 lft= TRUE rgt= TRUE

Knots - MEN
22 25

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0.144
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	11	8	15	34
lowsec	3	10	12	25
uppsec	58	71	59	188
tert	30	47	24	101
noch	100	134	98	332
1+ch	3	3	11	17
tot	102	137	109	348

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert
15	0	1.0689	0.9831	0.8061
16	4e-04	1.0921	1.0045	0.8237
17	0.0037	1.1137	1.0243	0.8399
18	0.0122	1.1306	1.0399	0.8527
19	0.0285	1.118	1.0584	0.8716
20	0.0542	1.083	1.0751	0.8913
21	0.0855	1.026	1.0906	0.9123
22	0.1136	0.9791	1.094	0.9209
23	0.1317	0.9442	1.0886	0.9197
24	0.1389	0.9031	1.0841	0.9358
25	0.1386	0.8728	1.0792	0.9456
26	0.1346	0.8364	1.0819	0.9685
27	0.1288	0.7948	1.0924	1.0045
28	0.1215	0.7528	1.1088	1.0483
29	0.1121	0.717	1.1276	1.0922
30	0.1004	0.6919	1.1465	1.1302
31	0.087	0.6779	1.1645	1.1613
32	0.0735	0.657	1.1884	1.2036
33	0.0617	0.6664	1.2052	1.2207
34	0.0527	0.6778	1.226	1.2417
35	0.0469	0.6917	1.2511	1.2672
36	0.0444	0.708	1.2805	1.2969
37	0.0447	0.7259	1.3129	1.3297
38	0.048	0.7442	1.3461	1.3634
39	0.0537	0.7614	1.3771	1.3948
40	0.0608	0.7754	1.4025	1.4205
41	0.0675	0.7847	1.4193	1.4375
42	0.0716	0.7882	1.4257	1.444
43	0.0709	0.7859	1.4214	1.4397
44	0.0649	0.7784	1.4079	1.426
45	0.055	0.7673	1.3879	1.4057
46	0.0433	0.7544	1.3644	1.3819
47	0.0321	0.7412	1.3406	1.3578
48	0.0225	0.7292	1.3188	1.3357

49	0.0151	0.719	1.3004	1.3171
50	0.0098	0.7109	1.2858	1.3023
51	0.0061	0.7048	1.2748	1.2912
52	0.0037	0.7003	1.2666	1.2829
53	0.0021	0.6967	1.2602	1.2763
54	0.0012	0.6936	1.2546	1.2707
55	6e-04	0.6906	1.2491	1.2651
56	3e-04	0.6873	1.2432	1.2591
57	2e-04	0.6837	1.2366	1.2525
58	1e-04	0.6798	1.2296	1.2453
59	0	0.6757	1.2221	1.2378
60	0	0.6714	1.2144	1.23

Knots - WOMEN
20 23

Covariates - WOMEN

	code	ncat	pvalue
EDU	2	3	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

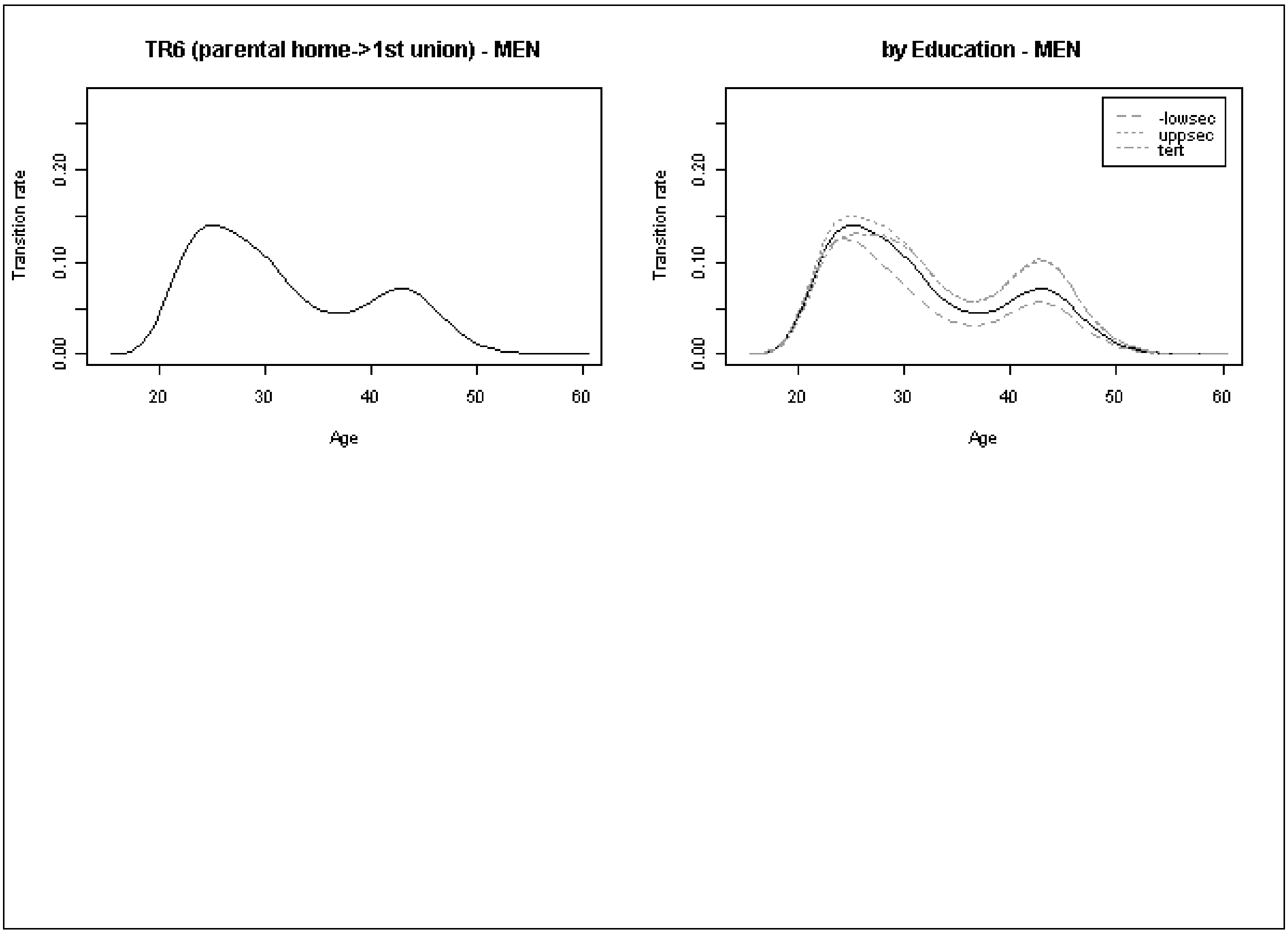
Number of events - WOMEN

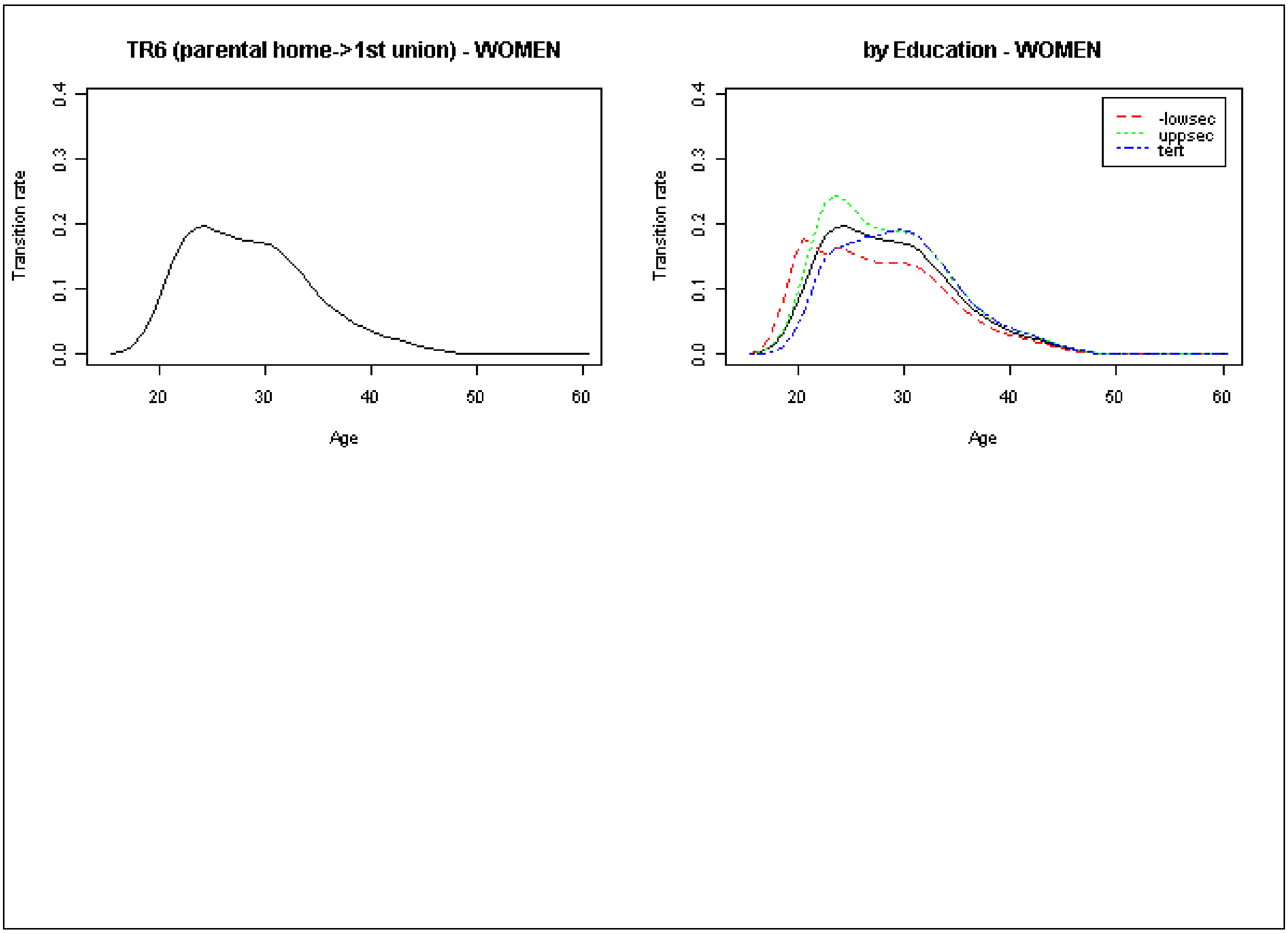
	int1	int2	int3	tot
prim	16	9	14	39
lowsec	7	2	10	19
uppsec	52	112	50	214
tert	15	92	54	161
noch	85	206	113	404
1+ch	4	8	15	27
tot	89	214	129	432

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec	tert
15	1e-04	2.5658	1.1169	0.3844
16	0.0029	2.5625	1.1155	0.3839
17	0.0136	2.5549	1.1122	0.3828
18	0.0317	2.5388	1.1052	0.3804
19	0.0627	2.2555	1.1334	0.452
20	0.1051	1.6802	1.2012	0.6053
21	0.149	1.1186	1.2632	0.7517
22	0.1815	0.8554	1.2787	0.8102
23	0.1963	0.8346	1.2339	0.8282
24	0.1969	0.8171	1.1908	0.8582
25	0.1907	0.8007	1.1399	0.9149
26	0.1836	0.7908	1.0983	0.9795
27	0.1787	0.7919	1.0813	1.0318
28	0.1759	0.7985	1.0751	1.0822
29	0.1733	0.8145	1.0966	1.1039
30	0.1681	0.8289	1.116	1.1234
31	0.157	0.8394	1.1302	1.1377
32	0.1416	0.8447	1.1373	1.1449
33	0.1227	0.8447	1.1373	1.1449
34	0.1029	0.8406	1.1318	1.1393
35	0.0846	0.8343	1.1233	1.1308
36	0.0692	0.8279	1.1147	1.1221
37	0.0571	0.8233	1.1085	1.1158
38	0.0476	0.8215	1.1061	1.1134
39	0.0401	0.8229	1.1079	1.1153
40	0.0338	0.827	1.1134	1.1209
41	0.0281	0.8327	1.1211	1.1286

42	0.0227	0.8387	1.1292	1.1367
43	0.0176	0.8436	1.1358	1.1433
44	0.013	0.8462	1.1393	1.1469
45	0.009	0.846	1.1391	1.1467
46	0.006	0.8429	1.1349	1.1425
47	0.0037	0.8373	1.1273	1.1348
48	0.0022	0.8297	1.1171	1.1246
49	0.0013	0.821	1.1054	1.1127
50	7e-04	0.8117	1.0929	1.1002
51	4e-04	0.8025	1.0804	1.0876
52	2e-04	0.7935	1.0683	1.0754
53	1e-04	0.7848	1.0566	1.0637
54	1e-04	0.7764	1.0454	1.0524
55	0	0.7683	1.0344	1.0413
56	0	0.7601	1.0234	1.0303
57	0	0.752	1.0124	1.0192
58	0	0.7437	1.0013	1.008
59	0	0.7354	0.9901	0.9967
60	0	0.727	0.9789	0.9854


TR6 (parental home->1st union) - MEN
Transition rate
Age
by Education - MEN
-lowsec
uppsec
tert


TR6 (parental home->1st union) - WOMEN
Transition rate
Age
by Education - WOMEN
-lowsec
uppsec
tert

TR7 (parental home->alone/others) - France

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 20 lft= TRUE rgt= TRUE

Knots - MEN
19 22

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0.011
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	7	4	13	24
lowsec	4	6	4	14
uppsec	35	52	26	113
tert	20	33	31	84
noch	65	96	74	235
1+ch	0	0	0	0
tot	65	96	74	236

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert
15	0.001	0.6798	0.9337	2.0274
16	0.0208	0.675	0.927	2.0128
17	0.0388	0.6696	0.9197	1.9969
18	0.0618	0.7773	0.9082	1.7895
19	0.0884	1.049	0.891	1.3049
20	0.1114	1.146	0.8763	1.1036
21	0.1246	1.1039	0.8539	1.1359
22	0.127	1.0671	0.8339	1.16
23	0.1222	1.0226	0.812	1.2071
24	0.115	0.9749	0.7909	1.2746
25	0.1084	0.9335	0.7748	1.3493
26	0.1032	0.9072	0.7673	1.4178
27	0.0983	0.898	0.7694	1.4765
28	0.0919	0.8897	0.7746	1.5534
29	0.0828	0.9105	0.7927	1.5897
30	0.0708	0.933	0.8123	1.6291
31	0.0576	0.9548	0.8313	1.6671
32	0.0453	0.9733	0.8473	1.6993
33	0.0352	0.9864	0.8588	1.7223
34	0.0283	0.9934	0.8649	1.7345
35	0.0242	0.9945	0.8658	1.7363
36	0.0224	0.9909	0.8627	1.7301
37	0.0223	0.9848	0.8574	1.7195
38	0.0236	0.9786	0.852	1.7086
39	0.0258	0.9741	0.8481	1.7007
40	0.0282	0.9728	0.8469	1.6984
41	0.03	0.9752	0.849	1.7026
42	0.0304	0.981	0.8541	1.7128
43	0.0293	0.9891	0.8611	1.727
44	0.027	0.9979	0.8688	1.7424
45	0.0242	1.0057	0.8756	1.756
46	0.0214	1.0108	0.8801	1.7649
47	0.0187	1.0122	0.8813	1.7673
48	0.0163	1.0095	0.8789	1.7625

49	0.0139	1.003	0.8732	1.7512
50	0.0116	0.9937	0.8652	1.735
51	0.0092	0.9829	0.8557	1.7161
52	0.007	0.9717	0.846	1.6966
53	0.005	0.9612	0.8369	1.6783
54	0.0033	0.9521	0.8289	1.6624
55	0.0022	0.9447	0.8225	1.6494
56	0.0014	0.9389	0.8174	1.6393
57	8e-04	0.9345	0.8136	1.6316
58	5e-04	0.931	0.8105	1.6255
59	3e-04	0.928	0.808	1.6204
60	2e-04	0.9253	0.8056	1.6156

Knots - WOMEN
19 21

Covariates - WOMEN

	code	ncat	pvalue
EDU	2	3	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

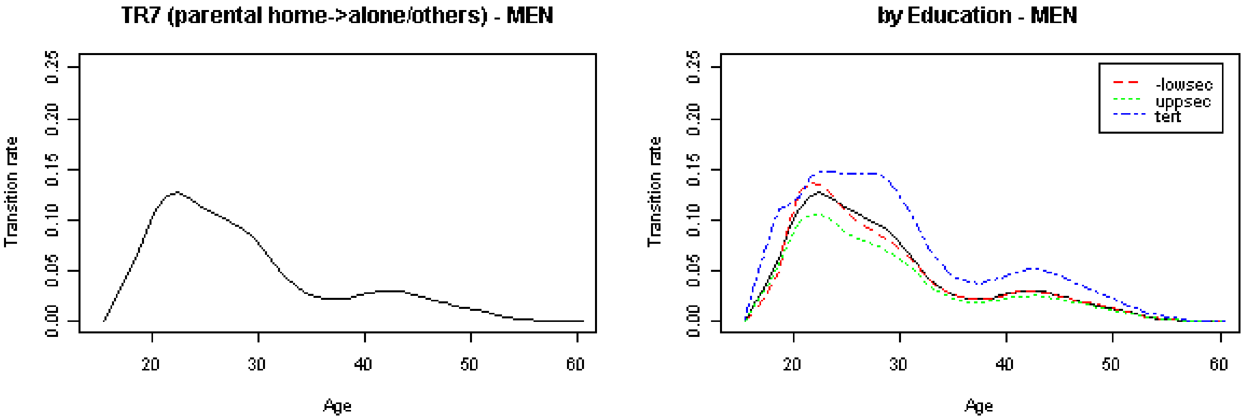
Number of events - WOMEN

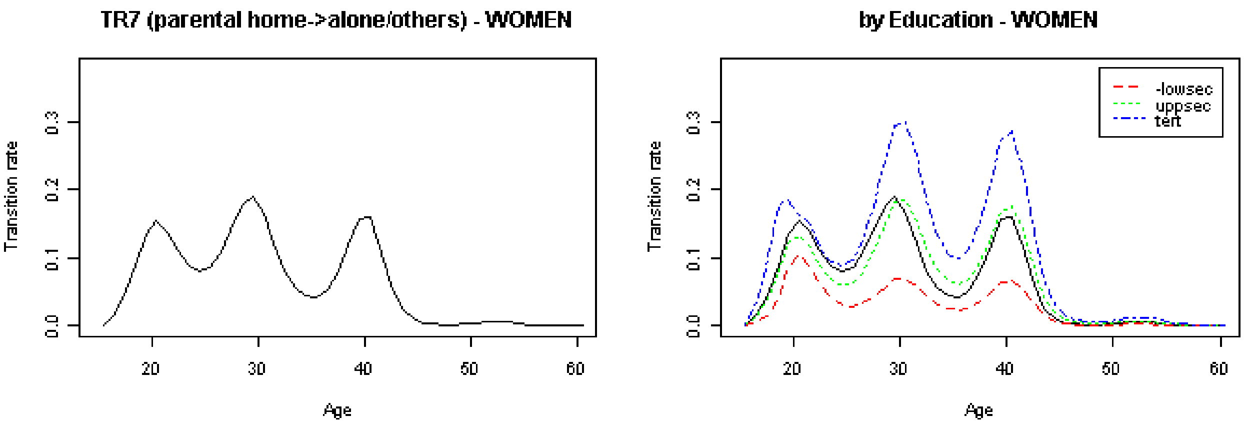
	int1	int2	int3	tot
prim	3	1	4	8
lowsec	2	2	1	5
uppsec	37	52	23	112
tert	31	50	46	127
noch	73	105	72	250
1+ch	0	1	2	3
tot	73	106	74	252

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec	tert
15	5e-04	0.317	0.8078	2.0504
16	0.0164	0.3291	0.8389	2.1293
17	0.0442	0.3399	0.8663	2.1989
18	0.0894	0.4265	0.8852	1.9857
19	0.1358	0.6255	0.8899	1.3471
20	0.1535	0.6888	0.8707	1.0649
21	0.1376	0.6246	0.845	1.0754
22	0.1097	0.5542	0.8049	1.0633
23	0.0887	0.4707	0.7678	1.0697
24	0.0807	0.3919	0.7405	1.0909
25	0.0867	0.3359	0.7272	1.1181
26	0.1073	0.309	0.7348	1.1588
27	0.1409	0.2962	0.7777	1.256
28	0.1758	0.3234	0.8493	1.3716
29	0.1888	0.3665	0.9624	1.5543
30	0.1662	0.423	1.1106	1.7937
31	0.1213	0.4851	1.2738	2.0572
32	0.0809	0.5396	1.4168	2.2881
33	0.0553	0.5711	1.4995	2.4217
34	0.0438	0.5705	1.4979	2.4191
35	0.0434	0.5406	1.4196	2.2926
36	0.0541	0.4949	1.2995	2.0987
37	0.0792	0.4496	1.1805	1.9064
38	0.119	0.4174	1.096	1.7701
39	0.1572	0.406	1.0661	1.7218
40	0.1598	0.4194	1.1013	1.7785
41	0.1167	0.4593	1.206	1.9477

42	0.0621	0.5245	1.3772	2.2241
43	0.0267	0.6073	1.5947	2.5755
44	0.0108	0.6905	1.813	2.928
45	0.0049	0.7487	1.966	3.175
46	0.0028	0.7603	1.9963	3.2241
47	0.0023	0.7205	1.8918	3.0553
48	0.0024	0.645	1.6937	2.7353
49	0.0033	0.5592	1.4683	2.3714
50	0.0048	0.4844	1.2718	2.0539
51	0.0065	0.4322	1.1348	1.8327
52	0.0072	0.4068	1.068	1.7249
53	0.0063	0.4089	1.0736	1.7338
54	0.0043	0.4391	1.1529	1.8619
55	0.0024	0.4989	1.3101	2.1158
56	0.0012	0.5907	1.551	2.5048
57	6e-04	0.7167	1.8819	3.0392
58	3e-04	0.8795	2.3092	3.7294
59	1e-04	1.0825	2.8424	4.5905
60	1e-04	1.3326	3.499	5.651


TR7 (parental home->alone/others) - MEN
by Education - MEN
Transition rate
Age
0.00
0.05
0.10
0.15
0.20
0.25
20
30
40
50
60
-lowsec
uppsec
tert


TR7 (parental home->alone/others) - WOMEN
by Education - WOMEN
Transition rate
Age
0.0
0.1
0.2
0.3
20
30
40
50
60
-lowsec
uppsec
tert

TR8 (alone/with others->1st union) - France

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 20 lft= TRUE rgt= TRUE

Knots - MEN
24 29

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	14	6	12	32
lowsec	9	3	3	15
uppsec	39	56	31	126
tert	24	68	46	138
noch	80	129	83	292
1+ch	6	4	11	21
tot	86	133	93	312

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert
15	0	0.7155	0.3421	0.2722
16	4e-04	0.9678	0.4627	0.3682
17	0.0042	1.2799	0.6119	0.4869
18	0.0178	1.6111	0.7703	0.6129
19	0.0424	1.8874	0.9024	0.718
20	0.078	2.036	0.9735	0.7746
21	0.1188	1.8652	1.0256	0.8807
22	0.1542	1.5567	1.028	0.9551
23	0.176	1.1404	1.0249	1.0474
24	0.1835	0.7836	1.01	1.1108
25	0.1819	0.5749	0.9824	1.1237
26	0.177	0.4362	0.977	1.1489
27	0.1727	0.4453	0.9392	1.1591
28	0.1708	0.4638	0.9418	1.1986
29	0.1712	0.4951	0.9513	1.2667
30	0.1731	0.534	0.9534	1.349
31	0.1749	0.574	0.9399	1.4298
32	0.1746	0.6089	0.9129	1.4968
33	0.1699	0.6357	0.8817	1.5457
34	0.1587	0.6557	0.8562	1.5817
35	0.1401	0.6735	0.843	1.6158
36	0.1157	0.7023	0.8206	1.6712
37	0.0892	0.7225	0.8442	1.7192
38	0.0645	0.7466	0.8723	1.7765
39	0.0457	0.7693	0.8988	1.8305
40	0.0329	0.7842	0.9162	1.866
41	0.0255	0.786	0.9184	1.8703
42	0.0223	0.7733	0.9035	1.84
43	0.0227	0.7492	0.8754	1.7827
44	0.0265	0.7201	0.8414	1.7135
45	0.0339	0.6931	0.8099	1.6493
46	0.0428	0.6739	0.7874	1.6035
47	0.047	0.6653	0.7774	1.5832
48	0.0388	0.6676	0.78	1.5885

49	0.0213	0.6783	0.7925	1.614
50	0.0072	0.6934	0.8101	1.6498
51	0.0015	0.7079	0.8271	1.6845
52	2e-04	0.7179	0.8388	1.7083
53	0	0.7214	0.8428	1.7165
54	0	0.7188	0.8398	1.7103
55	0	0.7126	0.8326	1.6956
56	0	0.706	0.8249	1.6799
57	0	0.7013	0.8194	1.6688
58	0	0.6997	0.8175	1.665
59	0	0.7007	0.8187	1.6673
60	0	0.703	0.8214	1.6728

Knots - WOMEN
22 26

Covariates - WOMEN

	code	ncat	pvalue
EDU	2	3	0.611
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

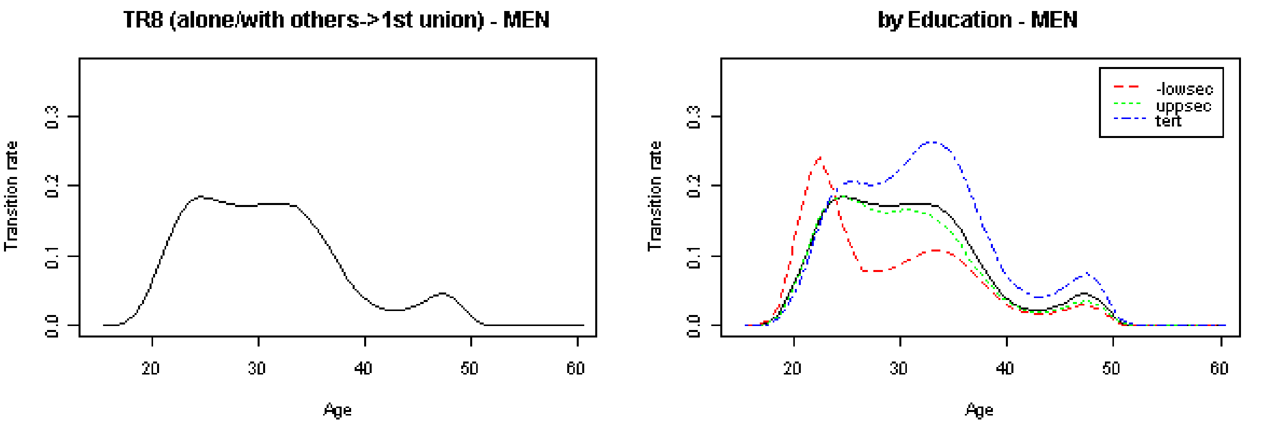
Number of events - WOMEN

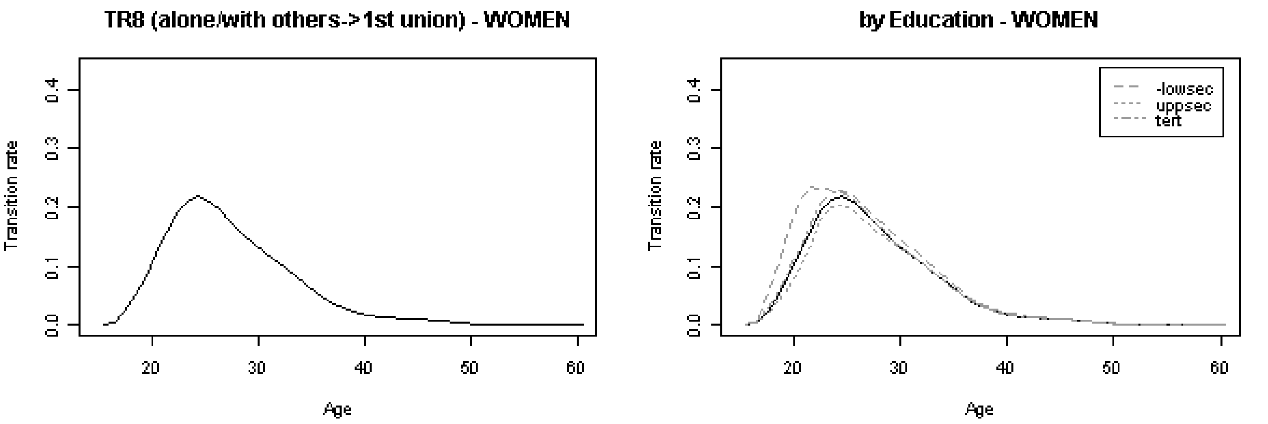
	int1	int2	int3	tot
prim	4	3	8	15
lowsec	2	1	1	4
uppsec	21	34	19	74
tert	34	79	40	153
noch	61	111	62	234
1+ch	0	5	6	11
tot	61	116	68	246

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec	tert
15	2e-04	2.184	0.887	1.2397
16	0.0041	2.1267	0.8637	1.2071
17	0.0246	2.0673	0.8396	1.1734
18	0.0513	2.0028	0.8134	1.1368
19	0.0824	1.9324	0.7848	1.0969
20	0.1198	1.7531	0.8014	1.0751
21	0.1595	1.4673	0.8665	1.075
22	0.1932	1.2047	0.928	1.0764
23	0.2135	1.0744	0.9426	1.0629
24	0.218	1.0547	0.9285	1.0349
25	0.2093	1.0462	0.9232	1.0205
26	0.1928	1.0486	0.9287	1.0139
27	0.1738	1.0591	0.9423	1.0123
28	0.1557	1.0733	0.9598	1.0128
29	0.1397	1.0866	0.9761	1.0133
30	0.1254	1.0951	0.9872	1.012
31	0.1121	1.0972	0.9913	1.0078
32	0.0986	1.0945	0.9921	0.9968
33	0.0845	1.0868	0.9851	0.9898
34	0.0702	1.079	0.978	0.9827
35	0.056	1.0738	0.9733	0.9779
36	0.0438	1.0728	0.9723	0.977
37	0.034	1.0761	0.9754	0.98
38	0.0265	1.0825	0.9812	0.9859
39	0.0212	1.0897	0.9877	0.9924
40	0.0175	1.0952	0.9927	0.9974
41	0.0151	1.097	0.9943	0.999

42	0.0134	1.0943	0.9918	0.9966
43	0.0122	1.0879	0.9861	0.9908
44	0.011	1.0796	0.9785	0.9832
45	0.0097	1.0716	0.9713	0.9759
46	0.0081	1.0658	0.966	0.9706
47	0.0064	1.0632	0.9637	0.9683
48	0.0048	1.0637	0.9641	0.9687
49	0.0034	1.0663	0.9665	0.9711
50	0.0022	1.0693	0.9692	0.9738
51	0.0014	1.0711	0.9708	0.9754
52	9e-04	1.0707	0.9704	0.9751
53	5e-04	1.068	0.9681	0.9727
54	3e-04	1.0641	0.9645	0.9691
55	2e-04	1.0603	0.961	0.9656
56	1e-04	1.0581	0.959	0.9636
57	1e-04	1.0584	0.9593	0.9639
58	0	1.0615	0.9621	0.9667
59	0	1.0667	0.9668	0.9714
60	0	1.0729	0.9725	0.9771


TR8 (alone/with others->1st union) - MEN
Transition rate
0.0
0.1
0.2
0.3
20
30
40
50
60
Age
by Education - MEN
-lowsec
uppsec
tert


TR8 (alone/with others->1st union) - WOMEN
Transition rate
0.0
0.1
0.2
0.3
0.4
20
30
40
50
60
Age
by Education - WOMEN
-lowsec
uppsec
tert

TR9 (1st union->disruption) - France

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
25 34

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0.231
MAR	0	1	NA
CHI	1	2	0
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	5	10	15	30
lowsec	5	2	11	18
uppsec	42	56	41	139
tert	18	55	28	101
no_marr	69	102	35	206
1st_mar	1	20	59	80
2nd mar	0	0	0	0
div/wid	0	0	0	0
no_ch	66	87	27	180
1ch	5	23	18	46
2ch	0	8	29	37
3+ch	0	6	21	27
tot	71	123	95	288

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert	noch	1+ch
16	0.0036	0.6431	1.1575	0.98	0.9157	0.3815
17	0.0211	0.6423	1.156	0.9787	0.9347	0.3895
18	0.0789	0.6417	1.155	0.9778	0.9548	0.3978
19	0.1234	0.6418	1.1552	0.978	0.9771	0.4071
20	0.1217	0.643	1.1572	0.9797	1.0028	0.4178
21	0.109	0.6454	1.1616	0.9834	1.0332	0.4305
22	0.0953	0.6628	1.1317	1.0098	1.0646	0.4476
23	0.0829	0.6779	1.1143	1.0327	1.1036	0.4671
24	0.0718	0.6993	1.0851	1.0652	1.1475	0.4904
25	0.0622	0.7264	1.0439	1.1062	1.196	0.5176
26	0.0539	0.7562	0.9968	1.1513	1.2492	0.5483
27	0.0469	0.7844	0.9535	1.194	1.3077	0.5812
28	0.0411	0.8076	0.9212	1.2292	1.3711	0.6154
29	0.0364	0.825	0.9008	1.2556	1.4385	0.6498
30	0.0325	0.8456	0.8677	1.2868	1.5038	0.6855
31	0.0294	0.8608	0.8776	1.2748	1.5979	0.7086
32	0.0268	0.8681	0.8832	1.2749	1.6741	0.7362
33	0.0248	0.8755	0.8885	1.2724	1.748	0.7607
34	0.0231	0.8831	0.8936	1.2673	1.8184	0.7812
35	0.0217	0.8913	0.8987	1.2594	1.8839	0.797
36	0.0206	0.8998	0.9035	1.2487	1.9432	0.8074
37	0.0197	0.9085	0.908	1.2352	1.9952	0.8123
38	0.0189	0.9169	0.9119	1.2191	2.0393	0.8121
39	0.0183	0.9246	0.915	1.201	2.076	0.8078
40	0.0177	0.9316	0.9173	1.182	2.107	0.8012
41	0.0171	0.9378	0.919	1.1632	2.1353	0.7942
42	0.0164	0.9436	0.9207	1.1462	2.1649	0.789
43	0.0156	0.9495	0.923	1.1321	2.2003	0.7875

44	0.0147	0.9561	0.9264	1.1219	2.2457	0.7914
45	0.0137	0.9639	0.9315	1.1161	2.3036	0.8015
46	0.0126	0.9731	0.9384	1.1146	2.375	0.8177
47	0.0115	0.9835	0.9469	1.1168	2.4579	0.8392
48	0.0105	1.0026	0.96	1.1061	2.5725	0.8544
49	0.0095	1.0114	0.9683	1.1157	2.6563	0.8823
50	0.0087	1.019	0.9756	1.1242	2.7321	0.9074
51	0.0081	1.0245	0.9809	1.1302	2.7908	0.9269
52	0.0076	1.0269	0.9832	1.1329	2.825	0.9383
53	0.0072	1.0258	0.9822	1.1317	2.8308	0.9402
54	0.007	1.0214	0.9779	1.1268	2.8081	0.9327
55	0.0068	1.0139	0.9707	1.1185	2.7602	0.9168
56	0.0064	1.0042	0.9615	1.1078	2.693	0.8944
57	0.0048	0.993	0.9507	1.0955	2.6131	0.8679
58	0.0021	0.981	0.9392	1.0822	2.5267	0.8392
59	5e-04	0.9687	0.9275	1.0687	2.4385	0.8099
60	1e-04	0.9564	0.9157	1.0551	2.3518	0.7811

Knots - WOMEN
26 37

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0.573
MAR	1	2	0
CHI	1	2	0
LIV	0	1	NA

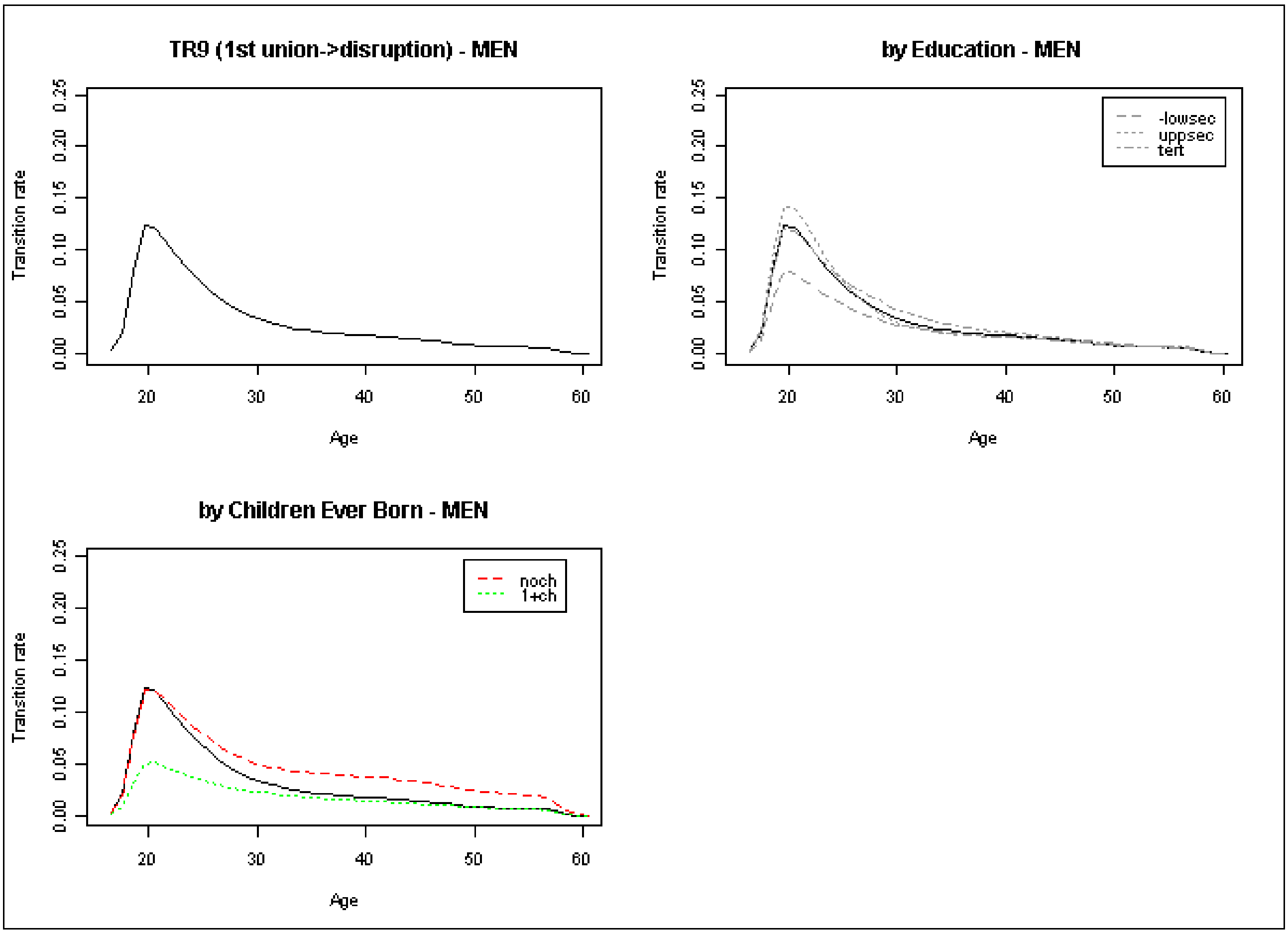
Number of events - WOMEN

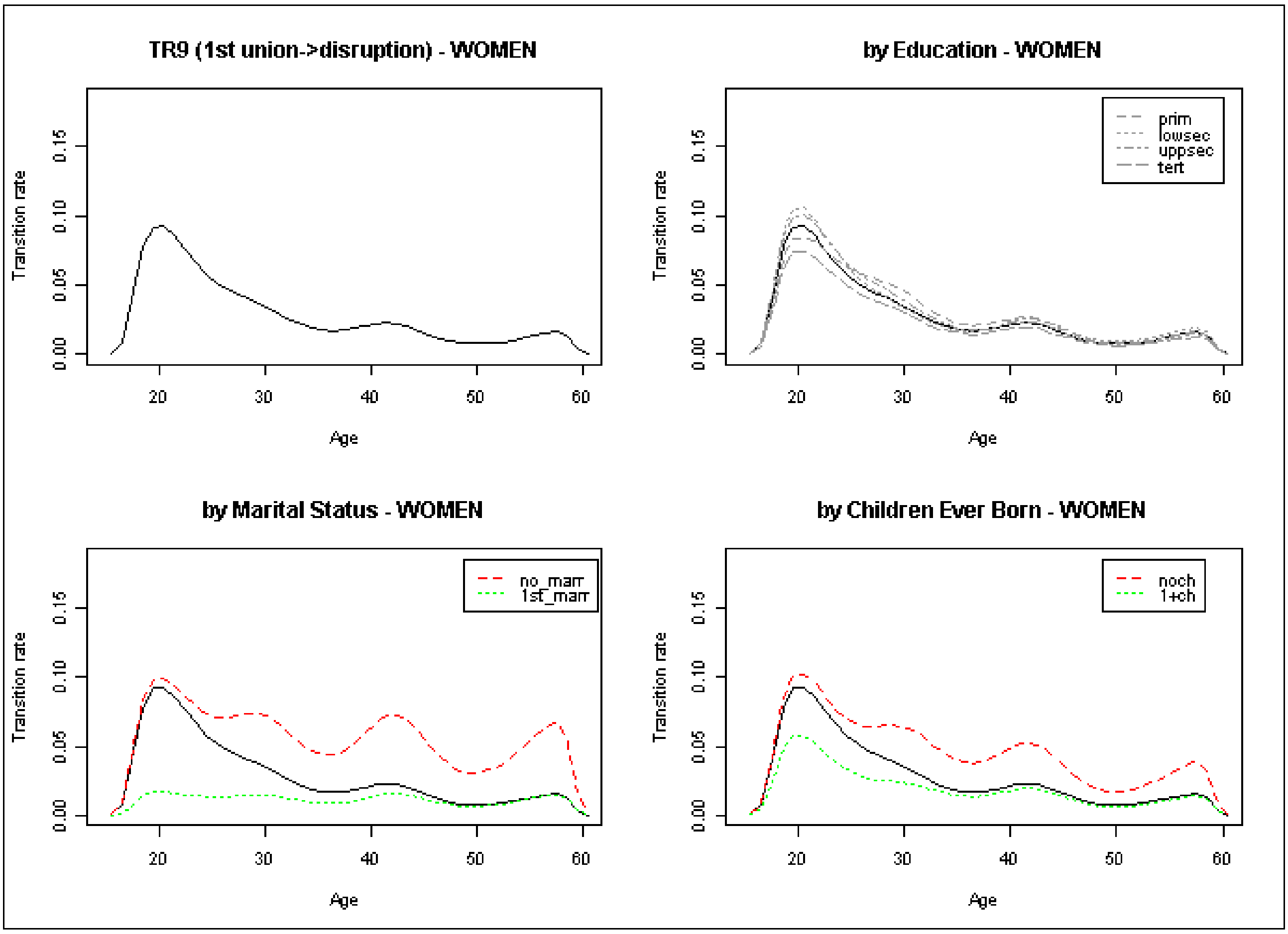
	int1	int2	int3	tot
prim	7	16	18	41
lowsec	5	5	30	40
uppsec	62	56	38	156
tert	38	57	24	119
no_marr	107	96	26	229
1st_mar	5	38	83	126
2nd mar	0	0	0	0
div/wid	0	0	0	0
no_ch	95	69	20	184
1ch	13	33	21	67
2ch	2	22	37	61
3+ch	1	10	30	41
tot	111	134	109	354

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar	noch	1+ch
15	0.001	0.9067	1.1495	1.0962	0.8078	1.0942	0.1874	0.9654	0.552
16	0.008	0.902	1.1436	1.0906	0.8037	1.0808	0.1851	1.0051	0.5748
17	0.0395	0.8985	1.1392	1.0864	0.8006	1.0688	0.183	1.0426	0.5962
18	0.0782	0.8976	1.1381	1.0853	0.7998	1.0602	0.1816	1.0728	0.6135
19	0.0921	0.9004	1.1416	1.0887	0.8023	1.0583	0.1812	1.0919	0.6244
20	0.0925	0.9075	1.1505	1.0972	0.8085	1.0673	0.1828	1.0987	0.6283
21	0.0858	0.9514	1.1376	1.1044	0.8194	1.084	0.1884	1.1248	0.6139
22	0.0762	0.9866	1.1377	1.1173	0.8325	1.1235	0.1971	1.1362	0.6024
23	0.0663	1.0332	1.1307	1.1295	0.8468	1.185	0.2107	1.1593	0.5894
24	0.058	1.0894	1.1136	1.1384	0.8606	1.2706	0.2299	1.2021	0.5784
25	0.0516	1.1499	1.0866	1.1424	0.8719	1.3813	0.2551	1.2694	0.5729
26	0.047	1.2058	1.054	1.1408	0.8791	1.5155	0.2857	1.361	0.5764
27	0.0436	1.249	1.0208	1.1343	0.8815	1.668	0.3201	1.4738	0.5906
28	0.0405	1.2759	0.9909	1.1241	0.8791	1.8291	0.3558	1.6017	0.6155
29	0.0372	1.2878	0.9657	1.1115	0.8732	1.9858	0.3898	1.7371	0.6484
30	0.0333	1.3097	0.9283	1.0945	0.8659	2.1157	0.4215	1.8933	0.6745

31	0.0292	1.2775	0.9503	1.0737	0.8554	2.223	0.4474	1.9974	0.7164
32	0.0251	1.2623	0.9498	1.0623	0.8478	2.3115	0.4663	2.0869	0.7498
33	0.0216	1.2497	0.9534	1.0535	0.8425	2.3801	0.4816	2.1512	0.7743
34	0.0191	1.2403	0.9618	1.0477	0.84	2.4409	0.4956	2.1907	0.7904
35	0.0176	1.234	0.9754	1.0449	0.8401	2.5062	0.511	2.2113	0.8
36	0.0171	1.2298	0.9937	1.0443	0.8425	2.586	0.5298	2.2215	0.8063
37	0.0176	1.2266	1.0159	1.0449	0.8463	2.685	0.553	2.2295	0.8121
38	0.0188	1.223	1.0409	1.0456	0.8505	2.8026	0.5807	2.2412	0.8196
39	0.0205	1.2177	1.0672	1.0453	0.8543	2.9331	0.6118	2.2587	0.8296
40	0.022	1.2099	1.0934	1.0431	0.8568	3.0673	0.6442	2.2803	0.8414
41	0.0227	1.1991	1.1181	1.0384	0.8574	3.1954	0.6758	2.3019	0.8534
42	0.022	1.1853	1.1401	1.0312	0.856	3.3101	0.7051	2.3179	0.8634
43	0.02	1.1689	1.1586	1.0216	0.8524	3.4086	0.7311	2.3236	0.8695
44	0.0172	1.1507	1.1731	1.0101	0.8469	3.4931	0.7541	2.3166	0.8706
45	0.0142	1.1315	1.1836	0.9973	0.84	3.5698	0.7753	2.2979	0.8671
46	0.0117	1.1121	1.1904	0.9839	0.8322	3.6458	0.7961	2.2718	0.8603
47	0.0097	1.0933	1.1943	0.9705	0.8239	3.7265	0.8176	2.2445	0.8526
48	0.0085	1.0757	1.1958	0.9577	0.8157	3.8136	0.8402	2.2223	0.8465
49	0.0079	1.06	1.1959	0.9461	0.8079	3.9044	0.8632	2.2107	0.8441
50	0.0079	1.0464	1.1952	0.9359	0.8011	3.9929	0.8854	2.2128	0.8465
51	0.0083	1.035	1.1944	0.9274	0.7953	4.0714	0.9049	2.2289	0.8541
52	0.0092	1.0113	1.2175	0.913	0.7893	4.1157	0.9241	2.2503	0.8681
53	0.0105	1.0074	1.2128	0.9094	0.7862	4.16	0.9341	2.2858	0.8818
54	0.012	1.0048	1.2097	0.9071	0.7842	4.1838	0.9394	2.3214	0.8955
55	0.0137	1.0035	1.2081	0.9059	0.7832	4.1915	0.9411	2.3509	0.9069
56	0.0152	1.0031	1.2076	0.9056	0.7829	4.1891	0.9406	2.3694	0.914
57	0.0162	1.0035	1.2081	0.906	0.7832	4.1828	0.9392	2.3746	0.916
58	0.0136	1.0045	1.2093	0.9069	0.784	4.1767	0.9378	2.3674	0.9133
59	0.0041	1.0058	1.2109	0.908	0.785	4.1723	0.9368	2.3516	0.9072
60	4e-04	1.0072	1.2126	0.9093	0.7861	4.1692	0.9361	2.3319	0.8996


TR9 (1st union->disruption) - MEN
by Education - MEN
-lowsec
uppsec
tert
by Children Ever Born - MEN
noch
1+ch
Transition rate
Age


TR9 (1st union->disruption) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec
tert
by Marital Status - WOMEN
no_marr
1st_marr
by Children Ever Born - WOMEN
noch
1+ch
Transition rate
Age

TR10 (Alone/others->2nd union) - France

Parameters
wl= 20 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
29 36

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0.092
MAR	1	2	0
CHI	2	3	0.296
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	26	21	22	69
lowsec	14	17	30	61
uppsec	87	100	86	273
tert	58	62	54	174
no_marr	171	129	36	336
1st_mar	4	4	8	16
2nd mar	0	0	0	0
div/wid	11	68	148	227
no_ch	164	134	74	372
1ch	15	42	38	95
2ch	5	15	46	66
3+ch	1	9	34	44
tot	185	200	192	578

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar	no_ch	1ch	2+ch
17	0.0014	1.0479	1.1246	0.9688	0.8996	1.0028	0.7385	1.0482	0.7971	0.69
18	0.0079	1.0525	1.1295	0.973	0.9035	0.9986	0.7354	1.0423	0.7926	0.6861
19	0.0356	1.0571	1.1344	0.9773	0.9075	0.995	0.7327	1.0366	0.7883	0.6824
20	0.0919	1.0618	1.1395	0.9816	0.9115	0.9929	0.7312	1.0315	0.7844	0.679
21	0.1357	1.0666	1.1446	0.9861	0.9156	0.9932	0.7314	1.0274	0.7813	0.6763
22	0.1595	1.0715	1.1499	0.9906	0.9198	0.9967	0.734	1.0246	0.7792	0.6745
23	0.1765	1.0764	1.1552	0.9951	0.9241	1.004	0.7394	1.0237	0.7785	0.6739
24	0.1893	1.0404	1.2013	0.9914	0.9554	0.9987	0.7624	1.0238	0.7885	0.6686
25	0.1995	1.0153	1.236	0.9898	0.979	1.0015	0.7845	1.0268	0.7979	0.6666
26	0.2062	0.975	1.285	0.9848	1.0121	1.001	0.8148	1.0321	0.8128	0.6643
27	0.2088	0.9203	1.347	0.9764	1.0537	0.9964	0.8527	1.0398	0.8331	0.6616
28	0.2071	0.8587	1.414	0.9659	1.0985	0.9893	0.8944	1.0503	0.8572	0.6597
29	0.2013	0.8017	1.4738	0.9555	1.1383	0.9832	0.9344	1.0636	0.8827	0.6602
30	0.1922	0.7571	1.5182	0.9464	1.1677	0.9802	0.9681	1.0797	0.9075	0.664
31	0.1806	0.7262	1.5455	0.939	1.1856	0.9801	0.9932	1.0982	0.9308	0.6712
32	0.1676	0.6825	1.5819	0.9277	1.2092	0.9699	1.0189	1.1177	0.9584	0.6771
33	0.154	0.6936	1.5272	0.9306	1.2165	0.9485	1.0597	1.1201	0.9739	0.7072
34	0.1406	0.6936	1.5034	0.9269	1.2128	0.9391	1.069	1.1353	0.9913	0.7259
35	0.1281	0.6938	1.4743	0.9226	1.2086	0.9229	1.0751	1.148	1.0077	0.7455
36	0.1169	0.6944	1.4401	0.9181	1.2042	0.9002	1.079	1.1571	1.0225	0.766
37	0.107	0.6959	1.4013	0.9137	1.2004	0.872	1.0816	1.1618	1.0351	0.787
38	0.0986	0.6985	1.3585	0.9098	1.1975	0.8398	1.0838	1.1619	1.0451	0.8084
39	0.0915	0.7024	1.3131	0.9068	1.196	0.8049	1.0863	1.1571	1.0523	0.8297
40	0.0856	0.7075	1.2664	0.9048	1.1961	0.7691	1.0895	1.148	1.0568	0.8504
41	0.0808	0.7138	1.2203	0.9042	1.1979	0.734	1.0937	1.1355	1.0588	0.8701
42	0.0768	0.7211	1.1764	0.9048	1.2015	0.701	1.0986	1.1205	1.0587	0.8882
43	0.0735	0.729	1.1365	0.9067	1.2065	0.6711	1.1041	1.1045	1.057	0.9043
44	0.0706	0.7372	1.1016	0.9096	1.2128	0.6451	1.1097	1.0886	1.0543	0.9181

45	0.0682	0.7456	1.0724	0.9136	1.2202	0.6232	1.1155	1.0736	1.0511	0.9296
46	0.0659	0.7539	1.049	0.9184	1.2283	0.6054	1.1212	1.0602	1.0477	0.9389
47	0.0637	0.7619	1.0309	0.9237	1.2368	0.5913	1.1267	1.0488	1.0447	0.9464
48	0.0615	0.7694	1.0175	0.9293	1.2455	0.5804	1.132	1.0394	1.0421	0.9523
49	0.0592	0.7765	1.0081	0.9349	1.2541	0.5722	1.1369	1.032	1.04	0.957
50	0.0568	0.7933	0.968	0.9457	1.2716	0.5508	1.164	1.0103	1.036	0.9752
51	0.0544	0.7965	0.972	0.9496	1.2769	0.5498	1.1619	1.0099	1.0356	0.9748
52	0.0519	0.7997	0.9758	0.9533	1.2818	0.549	1.1602	1.0097	1.0354	0.9746
53	0.0493	0.8025	0.9793	0.9567	1.2864	0.548	1.1581	1.0096	1.0353	0.9745
54	0.0468	0.8049	0.9823	0.9596	1.2903	0.5468	1.1555	1.0095	1.0352	0.9744
55	0.0438	0.807	0.9848	0.9621	1.2937	0.5451	1.1519	1.0093	1.035	0.9742
56	0.0411	0.8089	0.9871	0.9643	1.2966	0.5429	1.1472	1.0089	1.0345	0.9738
57	0.0384	0.8105	0.9891	0.9663	1.2993	0.5402	1.1416	1.0083	1.0339	0.9732
58	0.0356	0.812	0.9909	0.9681	1.3017	0.5371	1.135	1.0076	1.0332	0.9725
59	0.0327	0.8135	0.9928	0.9698	1.3041	0.5337	1.1278	1.0068	1.0325	0.9719
60	0.0297	0.815	0.9946	0.9716	1.3065	0.53	1.1201	1.0063	1.0319	0.9713
61	0.0265	0.8165	0.9964	0.9734	1.3089	0.5263	1.1122	1.006	1.0317	0.9711
62	0.0232	0.8181	0.9983	0.9752	1.3114	0.5227	1.1046	1.0063	1.0319	0.9714
63	0.0199	0.8195	1.0001	0.977	1.3137	0.5193	1.0973	1.0073	1.0329	0.9723
64	0.0165	0.8208	1.0016	0.9785	1.3158	0.5161	1.0907	1.0091	1.0348	0.974
65	0.0131	0.8219	1.003	0.9798	1.3175	0.5134	1.085	1.0118	1.0375	0.9766
66	0.01	0.8227	1.0039	0.9808	1.3188	0.5111	1.0801	1.0155	1.0413	0.9802
67	0.0073	0.8231	1.0045	0.9813	1.3195	0.5093	1.0763	1.0202	1.0462	0.9847
68	0.0051	0.8232	1.0045	0.9814	1.3196	0.5079	1.0733	1.0258	1.0519	0.9902
69	0.0034	0.8229	1.0042	0.9811	1.3192	0.5069	1.0712	1.0323	1.0586	0.9965
70	0.0021	0.8224	1.0036	0.9804	1.3183	0.5062	1.0698	1.0396	1.0661	1.0035
71	0.0013	0.8217	1.0027	0.9796	1.3172	0.5058	1.069	1.0476	1.0742	1.0112
72	8e-04	0.8209	1.0017	0.9786	1.3159	0.5057	1.0686	1.056	1.0829	1.0193
73	5e-04	0.8201	1.0007	0.9776	1.3146	0.5056	1.0685	1.0648	1.092	1.0278
74	3e-04	0.8193	0.9998	0.9767	1.3134	0.5057	1.0687	1.074	1.1013	1.0366
75	2e-04	0.8187	0.999	0.976	1.3123	0.5058	1.0689	1.0833	1.1109	1.0456
76	1e-04	0.8182	0.9984	0.9754	1.3115	0.506	1.0693	1.0927	1.1205	1.0548
77	1e-04	0.8178	0.9979	0.9749	1.3109	0.5062	1.0696	1.1023	1.1303	1.064
78	0	0.8175	0.9976	0.9745	1.3104	0.5063	1.0701	1.1119	1.1402	1.0733
79	0	0.8172	0.9972	0.9742	1.3099	0.5065	1.0705	1.1216	1.1502	1.0827

Knots - WOMEN
28 36

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0.079
MAR	1	2	0.024
CHI	2	3	0
LIV	0	1	NA

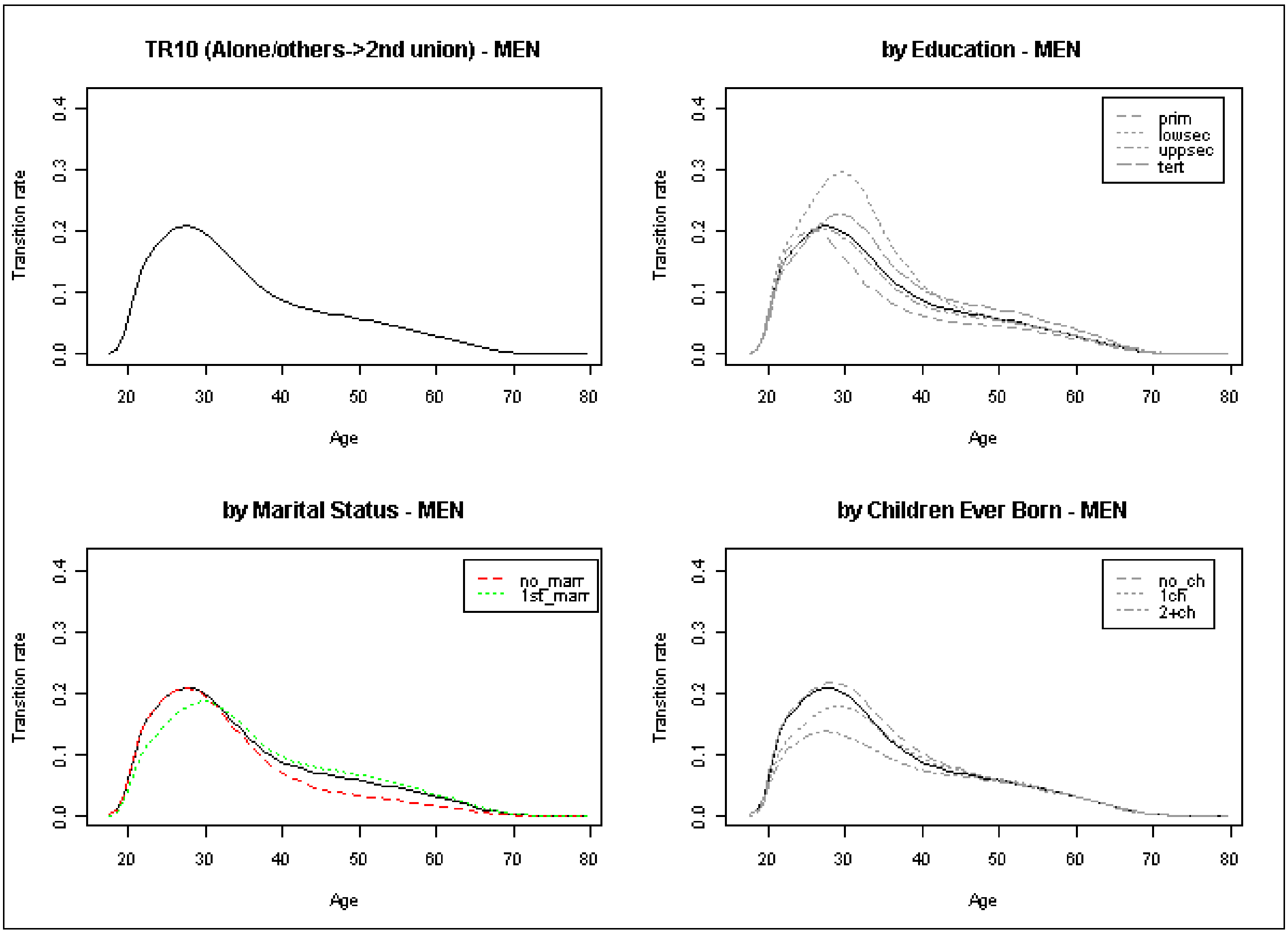
Number of events - WOMEN

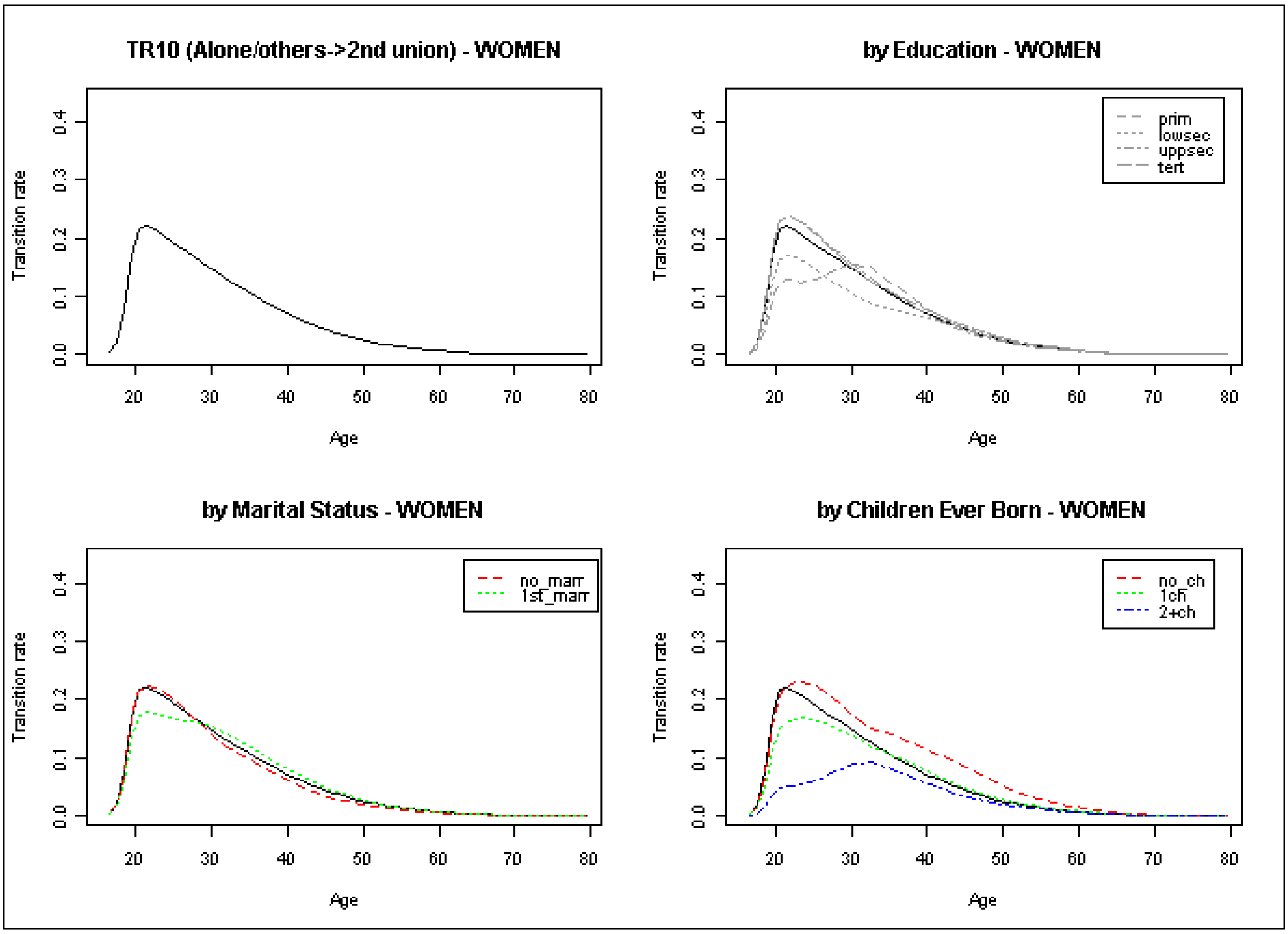
	int1	int2	int3	tot
prim	16	31	23	70
lowsec	10	23	52	85
uppsec	95	87	58	240
tert	55	78	48	181
no_marr	150	117	36	303
1st_mar	3	3	11	17
2nd mar	0	0	0	0
div/wid	22	99	135	256
no_ch	143	113	62	318
1ch	28	53	45	126
2ch	3	40	40	83
3+ch	1	14	36	51
tot	176	219	182	576

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar	no_ch	1ch	2+ch
16	0.0042	0.5513	0.73	1.0279	1.0217	0.9322	0.7486	0.7701	0.5598	0.1758
17	0.0199	0.5572	0.7378	1.0387	1.0325	0.9469	0.7604	0.8125	0.5906	0.1855
18	0.0764	0.5631	0.7456	1.0497	1.0435	0.9618	0.7724	0.8572	0.6231	0.1957
19	0.169	0.5691	0.7535	1.0609	1.0546	0.9769	0.7845	0.9045	0.6575	0.2065
20	0.2154	0.5752	0.7616	1.0723	1.0659	0.9921	0.7967	0.9546	0.6939	0.2179
21	0.2204	0.5814	0.7698	1.0839	1.0774	1.0072	0.8088	1.0075	0.7324	0.23
22	0.2147	0.5877	0.7782	1.0957	1.0891	1.0221	0.8208	1.0635	0.7731	0.2428
23	0.2056	0.5942	0.7868	1.1077	1.1011	1.0367	0.8325	1.1223	0.8158	0.2562
24	0.1966	0.6507	0.7786	1.1038	1.092	1.0315	0.8623	1.1475	0.8401	0.2941
25	0.1877	0.6942	0.775	1.1043	1.0887	1.0303	0.8865	1.1817	0.8699	0.328
26	0.1787	0.7566	0.7651	1.0989	1.0774	1.0208	0.9168	1.2004	0.8912	0.3735
27	0.1699	0.8371	0.7491	1.0876	1.0584	1.0031	0.9527	1.2016	0.9028	0.4311
28	0.161	0.9263	0.7302	1.0734	1.0357	0.9807	0.9902	1.191	0.9077	0.4965
29	0.1523	1.0098	0.713	1.0609	1.0152	0.9589	1.0239	1.1797	0.9121	0.5613
30	0.1436	1.0773	0.7011	1.0533	1.0013	0.9417	1.0496	1.1771	0.921	0.6185
31	0.1351	1.1266	0.695	1.0512	0.9948	0.9298	1.0666	1.1859	0.9359	0.6657
32	0.1268	1.1915	0.6832	1.0436	0.981	0.9105	1.0873	1.1751	0.9391	0.7226
33	0.1186	1.1777	0.7209	1.0325	0.9979	0.9013	1.0976	1.2478	0.96	0.7334
34	0.1106	1.1782	0.739	1.0334	1.0093	0.896	1.0992	1.2962	0.9832	0.749
35	0.1029	1.1751	0.7605	1.0312	1.0212	0.8885	1.1005	1.3467	1.0029	0.7613
36	0.0954	1.1677	0.7861	1.0255	1.0336	0.8787	1.1018	1.4	1.0189	0.7698
37	0.0882	1.156	0.8158	1.0161	1.0465	0.8671	1.1034	1.4568	1.0314	0.7748
38	0.0812	1.1402	0.8493	1.0032	1.0598	0.8537	1.1053	1.517	1.0406	0.7764
39	0.0745	1.1211	0.8852	0.9877	1.0731	0.8392	1.1072	1.5794	1.0472	0.7753
40	0.0682	1.1002	0.9218	0.9705	1.086	0.8242	1.1088	1.642	1.0518	0.7724
41	0.0622	1.0791	0.957	0.9532	1.0978	0.8092	1.1094	1.7024	1.0552	0.7687
42	0.0565	1.0593	0.9888	0.9368	1.1082	0.795	1.1088	1.7584	1.0582	0.7651
43	0.0511	1.0417	1.0159	0.9223	1.1168	0.7817	1.1066	1.8084	1.0612	0.7622
44	0.0461	1.0269	1.038	0.9101	1.1235	0.7696	1.1029	1.8518	1.0646	0.7604
45	0.0415	1.0148	1.0551	0.9	1.1284	0.7587	1.0978	1.8885	1.0685	0.7598
46	0.0373	1.0051	1.0677	0.892	1.1317	0.7489	1.0916	1.9193	1.0727	0.7602
47	0.0334	0.9788	1.1006	0.8701	1.1397	0.7346	1.0919	1.977	1.0701	0.7513
48	0.0298	0.978	1.0996	0.8693	1.1387	0.7282	1.0824	1.9894	1.0768	0.756
49	0.0266	0.9767	1.0982	0.8682	1.1373	0.722	1.0732	2.0008	1.083	0.7603
50	0.0236	0.9753	1.0966	0.8669	1.1356	0.7161	1.0644	2.0114	1.0887	0.7643
51	0.021	0.9735	1.0946	0.8654	1.1336	0.7104	1.056	2.021	1.0939	0.768
52	0.0185	0.9716	1.0925	0.8637	1.1313	0.705	1.048	2.0297	1.0986	0.7713
53	0.0163	0.9696	1.0902	0.8619	1.129	0.6998	1.0403	2.0374	1.1028	0.7742
54	0.0144	0.9674	1.0877	0.8599	1.1264	0.6949	1.0329	2.0442	1.1065	0.7768
55	0.0126	0.9651	1.0851	0.8579	1.1238	0.6901	1.0257	2.0499	1.1096	0.779
56	0.0111	0.9627	1.0825	0.8558	1.121	0.6854	1.0187	2.0544	1.112	0.7807
57	0.0096	0.9602	1.0797	0.8536	1.1181	0.6808	1.0119	2.0578	1.1138	0.7819
58	0.0083	0.9577	1.0768	0.8513	1.1151	0.6763	1.0052	2.0598	1.115	0.7827
59	0.0072	0.955	1.0738	0.8489	1.112	0.6718	0.9985	2.0606	1.1154	0.783
60	0.0061	0.9523	1.0707	0.8465	1.1088	0.6673	0.9919	2.0603	1.1152	0.7829
61	0.0051	0.9495	1.0675	0.844	1.1055	0.6629	0.9853	2.0589	1.1144	0.7824
62	0.0042	0.9466	1.0643	0.8414	1.1022	0.6585	0.9788	2.0566	1.1132	0.7815
63	0.0033	0.9437	1.0611	0.8389	1.0989	0.6541	0.9723	2.0537	1.1116	0.7804
64	0.0026	0.9408	1.0579	0.8363	1.0955	0.6499	0.966	2.0504	1.1099	0.7792
65	0.002	0.938	1.0546	0.8338	1.0922	0.6457	0.9598	2.047	1.108	0.7778
66	0.0015	0.9351	1.0515	0.8313	1.0889	0.6416	0.9537	2.0435	1.1061	0.7765
67	0.001	0.9324	1.0483	0.8288	1.0856	0.6377	0.9479	2.0403	1.1044	0.7753
68	7e-04	0.9297	1.0453	0.8264	1.0825	0.6339	0.9422	2.0373	1.1028	0.7742
69	5e-04	0.927	1.0423	0.824	1.0794	0.6302	0.9367	2.0347	1.1014	0.7732
70	3e-04	0.9244	1.0393	0.8217	1.0763	0.6265	0.9313	2.0324	1.1001	0.7723
71	2e-04	0.9218	1.0364	0.8194	1.0733	0.623	0.9261	2.0303	1.099	0.7715
72	1e-04	0.9192	1.0336	0.8171	1.0704	0.6196	0.9209	2.0284	1.098	0.7708
73	1e-04	0.9167	1.0307	0.8149	1.0674	0.6161	0.9158	2.0266	1.097	0.7701
74	1e-04	0.9142	1.0279	0.8126	1.0645	0.6127	0.9108	2.0248	1.096	0.7694
75	0	0.9117	1.025	0.8104	1.0615	0.6093	0.9057	2.0229	1.095	0.7687

76	0	0.9091	1.0222	0.8081	1.0586	0.606	0.9007	2.021	1.0939	0.768
77	0	0.9066	1.0193	0.8059	1.0556	0.6026	0.8957	2.019	1.0928	0.7672
78	0	0.904	1.0165	0.8036	1.0527	0.5992	0.8907	2.0169	1.0917	0.7664
79	0	0.9015	1.0136	0.8014	1.0497	0.5958	0.8857	2.0148	1.0906	0.7656


TR10 (Alone/others->2nd union) - MEN
by Education - MEN
by Marital Status - MEN
by Children Ever Born - MEN
Transition rate
Age
prim
lowsec
uppsec
tert
no_marr
1st_marr
no_ch
1ch
2+ch


TR10 (Alone/others->2nd union) - WOMEN
by Education - WOMEN
by Marital Status - WOMEN
by Children Ever Born - WOMEN
Transition rate
Age
prim
lowsec
uppsec
tert
no_marr
1st_marr
no_ch
1ch
2+ch

TR11 (childless->1st birth) - France

Parameters
wl= 5 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
28 32

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0
MAR	1	2	0
CHI	0	1	NA
LIV	3	3	0

Number of events - MEN

	int1	int2	int3	tot
prim	20	9	6	35
lowsec	9	7	11	27
uppsec	65	98	56	219
tert	24	81	54	159
no_marr	92	93	63	248
1st_mar	26	103	60	189
2nd mar	0	0	2	2
div/wid	0	0	1	1
par_hom	1	3	0	4
no_part	112	168	87	367
1st_un	4	25	40	69
tot	118	195	127	440

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar	par_hom	no_part	1st_un
15	0	16.2016	14.8613	8.4144	3.6408	1.5985	5.986	10.1013	227.445	155.2713
16	0	8.345	7.6547	4.334	1.8753	1.3434	5.0308	2.5624	57.6962	39.3879
17	0	4.5878	4.2083	2.3827	1.031	1.1561	4.3294	0.7356	16.5629	11.3071
18	2e-04	2.8805	2.6422	1.496	0.6473	1.0409	3.8981	0.2699	6.0776	4.149
19	0.0031	2.1555	1.9772	1.1195	0.4844	0.9884	3.7013	0.1352	3.0434	2.0776
20	0.0121	1.9206	1.7617	0.9975	0.4316	0.9785	3.6644	0.0905	2.0383	1.3915
21	0.0206	1.9524	1.7909	1.014	0.4387	0.9848	3.6878	0.0742	1.6716	1.1412
22	0.0229	2.1179	1.9427	1.1	0.4759	0.9796	3.6685	0.0669	1.5054	1.0277
23	0.0226	2.2933	2.1036	1.191	0.5154	0.9458	3.5418	0.0611	1.3756	0.9391
24	0.0246	2.2001	2.0978	1.2952	0.6318	0.8723	3.3667	0.0592	1.2035	0.8444
25	0.032	1.9685	1.9609	1.3198	0.7101	0.7902	3.1438	0.0584	1.0746	0.7761
26	0.0471	1.578	1.7027	1.3085	0.7948	0.712	2.9701	0.0634	1.0021	0.7593
27	0.0706	1.1714	1.4231	1.2763	0.8645	0.6518	2.8749	0.0757	1.0052	0.8101
28	0.0971	0.8683	1.2035	1.2308	0.8971	0.6153	2.8451	0.0942	1.08	0.9219
29	0.1165	0.6902	1.0646	1.185	0.8991	0.5978	2.8498	0.113	1.1781	1.0463
30	0.1231	0.5495	0.9659	1.17	0.9198	0.5847	2.8728	0.1237	1.1742	1.0872
31	0.1201	0.5078	0.9718	1.1187	0.9532	0.5984	2.7599	0.1025	1.2001	1.2285
32	0.1135	0.4734	0.9887	1.0819	0.9965	0.6046	2.6171	0.0737	1.0672	1.1777
33	0.1064	0.4284	1.0295	1.0427	1.0774	0.6164	2.4183	0.0455	0.9263	1.1128
34	0.098	0.3797	1.0855	1.0059	1.1803	0.633	2.2129	0.0261	0.8307	1.0699
35	0.0865	0.3419	1.144	0.9845	1.2798	0.649	2.0565	0.0158	0.7988	1.0746
36	0.0717	0.3223	1.2001	0.9855	1.365	0.6609	1.9654	0.0112	0.8364	1.1511
37	0.056	0.3052	1.2707	0.9965	1.4674	0.6747	1.8837	0.0075	0.957	1.3431
38	0.0424	0.3152	1.3121	1.029	1.5153	0.6647	1.8559	0.0083	1.0525	1.4772
39	0.0319	0.3225	1.3427	1.053	1.5506	0.6437	1.7972	0.0086	1.0986	1.5419
40	0.0247	0.3241	1.3492	1.0581	1.5581	0.6121	1.7089	0.0083	1.0543	1.4797
41	0.0194	0.3187	1.3267	1.0405	1.5321	0.5767	1.6101	0.0075	0.9508	1.3344
42	0.015	0.3079	1.2819	1.0053	1.4804	0.5466	1.5261	0.0067	0.8561	1.2015
43	0.0107	0.2952	1.2288	0.9637	1.4191	0.5283	1.4751	0.0064	0.8194	1.15

44	0.0067	0.2839	1.1821	0.9271	1.3651	0.5233	1.4611	0.0067	0.8576	1.2036
45	0.0035	0.2767	1.1518	0.9033	1.3301	0.5276	1.4729	0.0075	0.9575	1.3438
46	0.0016	0.2744	1.1422	0.8958	1.3191	0.5329	1.4879	0.0084	1.0677	1.4984
47	7e-04	0.277	1.1532	0.9044	1.3318	0.5305	1.4811	0.0087	1.1047	1.5505
48	3e-04	0.2838	1.1816	0.9267	1.3646	0.5154	1.4389	0.008	1.0164	1.4265
49	1e-04	0.2937	1.2227	0.9589	1.412	0.4893	1.3662	0.0066	0.8388	1.1772
50	1e-04	0.3053	1.271	0.9968	1.4678	0.4589	1.2812	0.0051	0.6524	0.9157

Knots - WOMEN
25 29

Covariates - WOMEN

	code	ncat	pvalue
EDU	2	3	0
MAR	1	2	0
CHI	0	1	NA
LIV	3	3	0

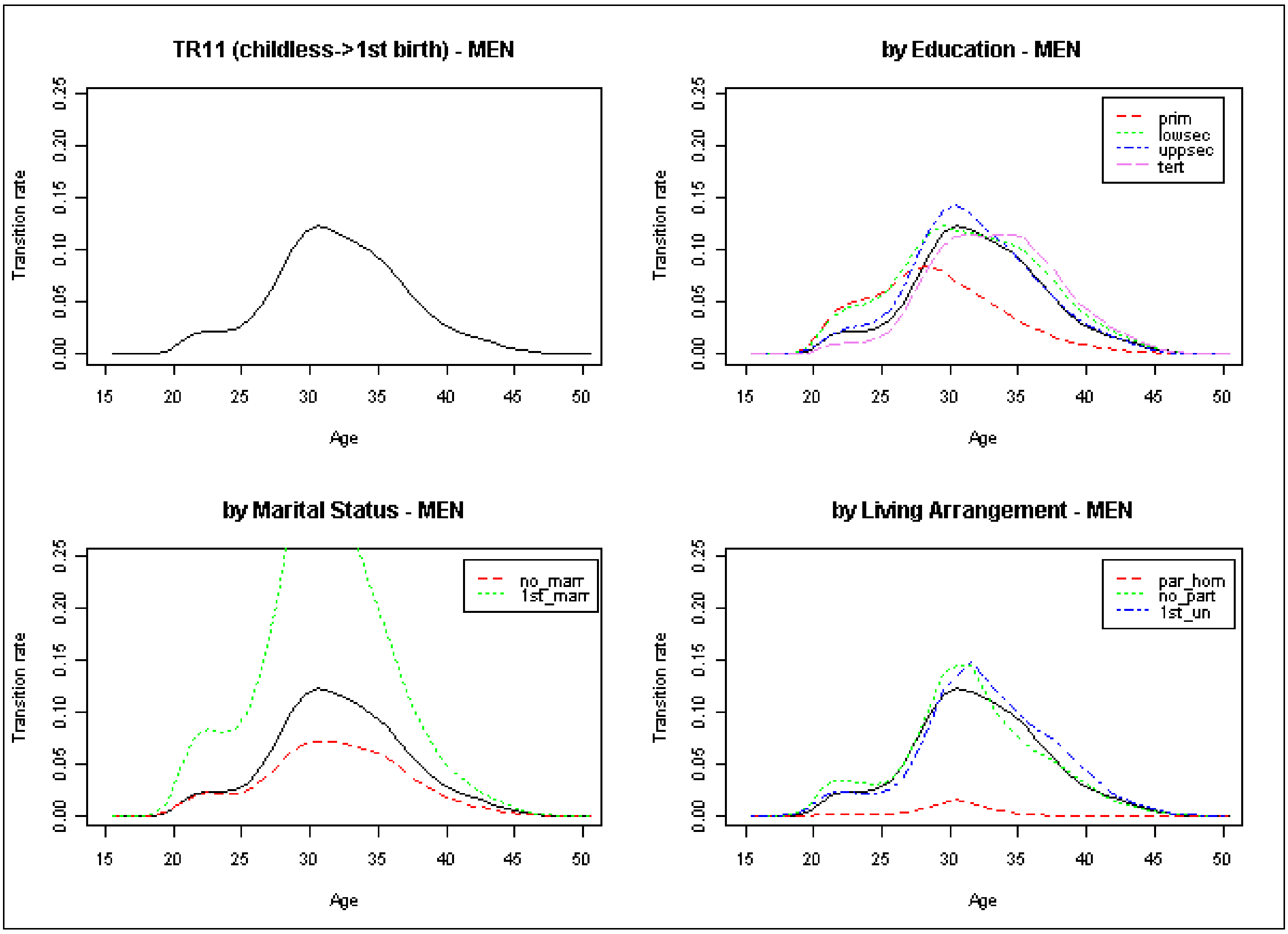
Number of events - WOMEN

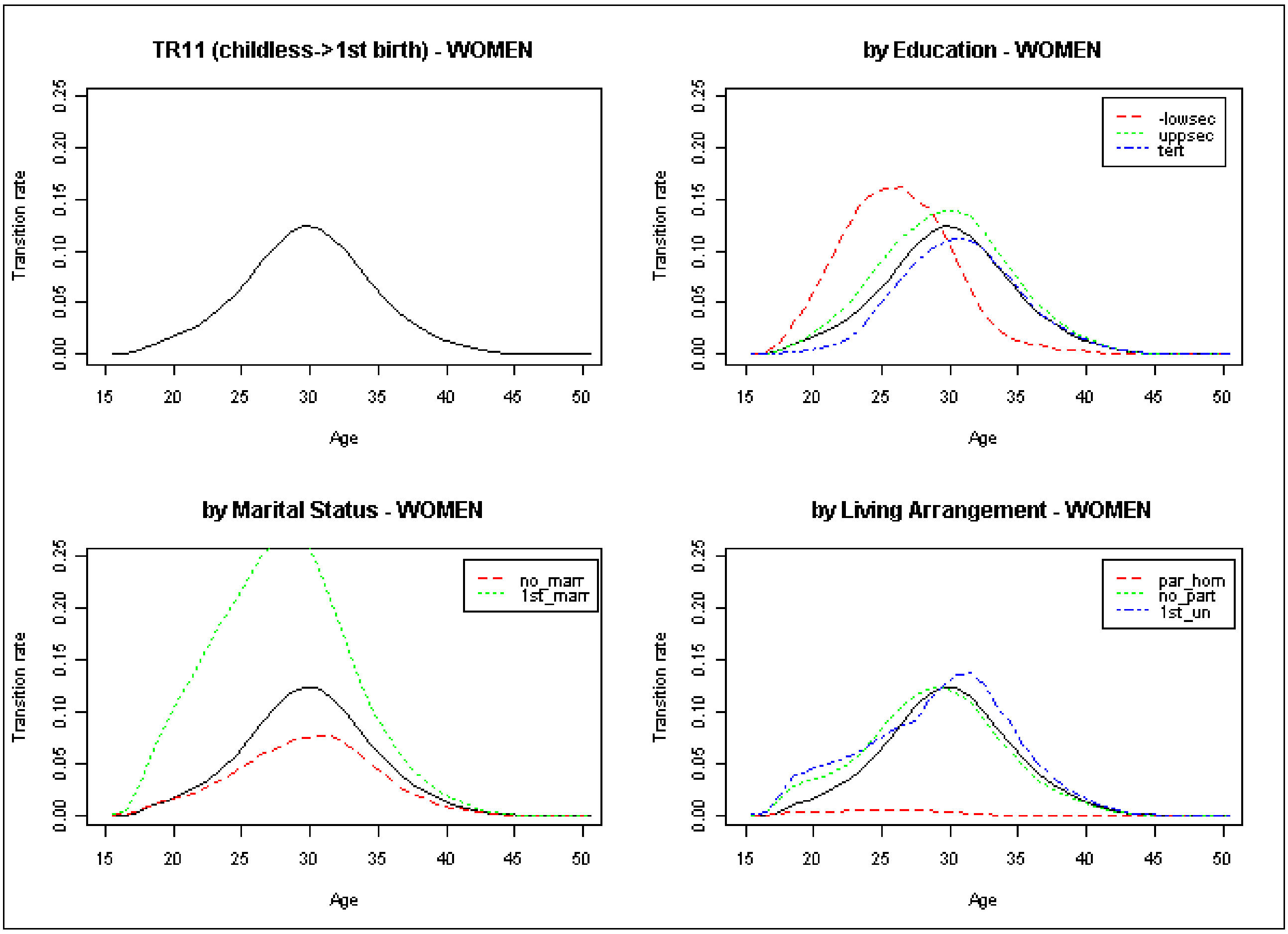
	int1	int2	int3	tot
prim	19	9	3	31
lowsec	4	3	0	7
uppsec	66	62	49	177
tert	16	86	77	179
no_marr	84	77	67	228
1st_mar	22	82	57	161
2nd mar	0	0	0	0
div/wid	0	0	5	5
par_hom	8	1	0	9
no_part	94	144	94	332
1st_un	4	14	35	53
tot	106	159	129	394

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec	tert	no_marr	1st_mar	par_hom	no_part	1st_un
15	1e-04	2.1208	0.7461	0.1566	1.2042	7.8763	0.6266	5.8534	7.6381
16	7e-04	2.3988	0.844	0.1771	1.1404	7.4592	0.4977	4.6495	6.0671
17	0.0041	2.7054	0.9518	0.1998	1.0793	7.0594	0.3948	3.6877	4.812
18	0.0097	3.0308	1.0663	0.2238	1.0193	6.667	0.3127	2.9213	3.8119
19	0.0144	3.3601	1.1822	0.2481	0.9584	6.2689	0.2483	2.3198	3.0271
20	0.0196	3.6742	1.2927	0.2713	0.8949	5.8535	0.1991	1.86	2.4271
21	0.026	3.6786	1.3712	0.3572	0.8525	5.2907	0.1564	1.618	1.9737
22	0.0344	3.5893	1.4261	0.4465	0.8041	4.7336	0.1257	1.4391	1.646
23	0.0449	3.235	1.4387	0.5729	0.7639	4.1425	0.1011	1.352	1.4081
24	0.0579	2.7017	1.4092	0.7094	0.7275	3.5828	0.0819	1.3097	1.2324
25	0.0731	2.1857	1.3486	0.8057	0.6888	3.1251	0.0677	1.2621	1.0964
26	0.0895	1.8026	1.2666	0.8361	0.6486	2.7909	0.0576	1.1858	0.9812
27	0.1051	1.4184	1.1611	0.8407	0.6186	2.5258	0.0486	1.1041	0.8723
28	0.1173	1.1909	1.1517	0.8648	0.6114	2.3153	0.0389	1.0583	0.9628
29	0.1236	0.9811	1.1252	0.8709	0.6126	2.1515	0.0305	0.9976	1.0104
30	0.1225	0.7516	1.1353	0.9128	0.634	1.9819	0.0218	0.9676	1.1088
31	0.1142	0.5403	1.1632	0.968	0.6661	1.8163	0.0142	0.9501	1.2074
32	0.1007	0.3865	1.1806	1.0056	0.6937	1.6836	0.009	0.9244	1.2547
33	0.0845	0.2964	1.1812	1.019	0.7093	1.5966	0.0061	0.8906	1.2517
34	0.0682	0.2198	1.2033	1.0499	0.7254	1.5144	0.0037	0.8806	1.2755
35	0.0535	0.217	1.188	1.0365	0.7192	1.5015	0.0036	0.8511	1.2328
36	0.0406	0.217	1.1882	1.0367	0.7139	1.4903	0.0036	0.84	1.2167
37	0.0304	0.2186	1.197	1.0444	0.7092	1.4805	0.0036	0.8392	1.2156
38	0.0222	0.2207	1.2085	1.0544	0.7046	1.4711	0.0036	0.8414	1.2188
39	0.0158	0.2226	1.2187	1.0633	0.6998	1.461	0.0036	0.8401	1.2169
40	0.0109	0.2238	1.2252	1.069	0.6943	1.4496	0.0035	0.8308	1.2034
41	0.007	0.2242	1.2277	1.0711	0.6882	1.4368	0.0034	0.8114	1.1753

42	0.0041	0.2241	1.2268	1.0703	0.6818	1.4235	0.0033	0.7822	1.133
43	0.0022	0.2235	1.2235	1.0675	0.6757	1.4106	0.0032	0.7452	1.0795
44	0.001	0.2226	1.2189	1.0634	0.67	1.3988	0.003	0.7037	1.0194
45	4e-04	0.2217	1.2135	1.0588	0.6649	1.3881	0.0028	0.6611	0.9575
46	2e-04	0.2206	1.2078	1.0538	0.66	1.3779	0.0026	0.6198	0.8978
47	1e-04	0.2195	1.2016	1.0484	0.655	1.3674	0.0025	0.5816	0.8424
48	0	0.2183	1.1952	1.0427	0.6495	1.3561	0.0023	0.5468	0.792
49	0	0.2171	1.1884	1.0368	0.6436	1.3437	0.0022	0.5151	0.7462
50	0	0.2158	1.1814	1.0308	0.6375	1.3309	0.0021	0.4858	0.7038


TR11 (childless->1st birth) - MEN
by Education - MEN
prim
lowsec
uppsec
tert
by Marital Status - MEN
no_marr
1st_marr
by Living Arrangement - MEN
par_hom
no_part
1st_un
Transition rate
Age
0.00 0.05 0.10 0.15 0.20 0.25
15 20 25 30 35 40 45 50


TR11 (childless->1st birth) - WOMEN
by Education - WOMEN
-lowsec
uppsec
tert
by Marital Status - WOMEN
no_marr
1st_marr
by Living Arrangement - WOMEN
par_hom
no_part
1st_un
Transition rate
Age
0.00 0.05 0.10 0.15 0.20 0.25
15 20 25 30 35 40 45 50

TR12 (1st birth->2nd birth) - France

Parameters
wl= 5 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
31 35

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0
MAR	1	2	0
CHI	0	1	NA
LIV	3	3	0.04

Number of events - MEN

	int1	int2	int3	tot
prim	15	9	5	29
lowsec	7	8	3	18
uppsec	42	67	37	146
tert	23	39	41	103
no_marr	39	41	22	102
1st_mar	48	81	53	182
2nd mar	0	2	2	4
div/wid	0	0	9	9
par_hom	0	0	0	0
no_part	80	104	52	236
1st_un	8	20	34	62
tot	88	123	86	297

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert	no_marr	1st_mar	par_hom	no_part	1st_un
20	0.0011	1.2194	0.7078	0.9661	0.9568	1.6214	0	1.4098	1.3465
21	0.0107	1.1921	0.692	0.9445	0.9351	1.5846	0	1.1257	1.0751
22	0.0586	1.1915	0.6917	0.944	0.9142	1.5492	0	0.9571	0.9141
23	0.1118	1.2339	0.7163	0.9777	0.8933	1.5137	0	0.9059	0.8653
24	0.1144	1.3149	0.7633	1.0418	0.87	1.4743	0	0.9493	0.9067
25	0.101	1.4057	0.816	1.1138	0.8425	1.4278	0	1.0415	0.9948
26	0.0947	1.4665	0.8513	1.1619	0.8112	1.3747	0	1.1135	1.0635
27	0.1034	1.4559	0.872	1.1642	0.7857	1.3122	0	1.1576	1.1017
28	0.1282	1.4021	0.8731	1.1343	0.7669	1.2575	0	1.135	1.0757
29	0.1629	1.3329	0.8811	1.0985	0.7616	1.2142	0	1.112	1.0479
30	0.1904	1.2866	0.9025	1.0809	0.7673	1.1892	0	1.1093	1.0402
31	0.1947	1.2749	0.9292	1.0849	0.7766	1.1819	0	1.1199	1.0472
32	0.1793	1.2676	0.9524	1.09	0.7852	1.1777	0	1.1311	1.0554
33	0.1591	1.1774	0.9309	1.2414	0.7715	1.1928	0	1.1805	1.2854
34	0.1434	1.073	0.8819	1.2976	0.7533	1.1904	0	1.088	1.2863
35	0.1318	0.9318	0.8148	1.369	0.7273	1.1872	0	0.9434	1.2262
36	0.1198	0.7899	0.755	1.4786	0.6995	1.1913	0	0.7988	1.1373
37	0.1055	0.6764	0.7222	1.6409	0.6758	1.2057	0	0.6962	1.0667
38	0.0919	0.6019	0.7216	1.8509	0.6581	1.2248	0	0.6515	1.0504
39	0.0836	0.5607	0.7437	2.078	0.6437	1.2376	0	0.6629	1.1035
40	0.0818	0.5375	0.7686	2.2676	0.6281	1.2342	0	0.7172	1.2167
41	0.0824	0.4813	0.7738	2.4538	0.6033	1.222	0	0.8144	1.414
42	0.0752	0.4757	0.7647	2.4249	0.5851	1.1853	0	0.8637	1.4998
43	0.0534	0.4651	0.7476	2.3708	0.5696	1.1538	0	0.8839	1.5348
44	0.028	0.4611	0.7413	2.3508	0.5617	1.1377	0	0.8766	1.5221
45	0.0115	0.4707	0.7568	2.3998	0.5624	1.1392	0	0.8589	1.4914
46	0.0043	0.4923	0.7914	2.5096	0.568	1.1505	0	0.8462	1.4694
47	0.0017	0.5165	0.8303	2.633	0.5716	1.1579	0	0.8441	1.4656
48	9e-04	0.532	0.8553	2.7122	0.5674	1.1493	0	0.8498	1.4755

49	6e-04	0.5338	0.8582	2.7214	0.5543	1.1229	0	0.8586	1.4909
50	5e-04	0.5266	0.8465	2.6845	0.5364	1.0865	0	0.868	1.5072

Knots - WOMEN
29 32

Covariates - WOMEN

	code	ncat	pvalue
EDU	2	3	0.009
MAR	1	2	0
CHI	0	1	NA
LIV	3	3	0.077

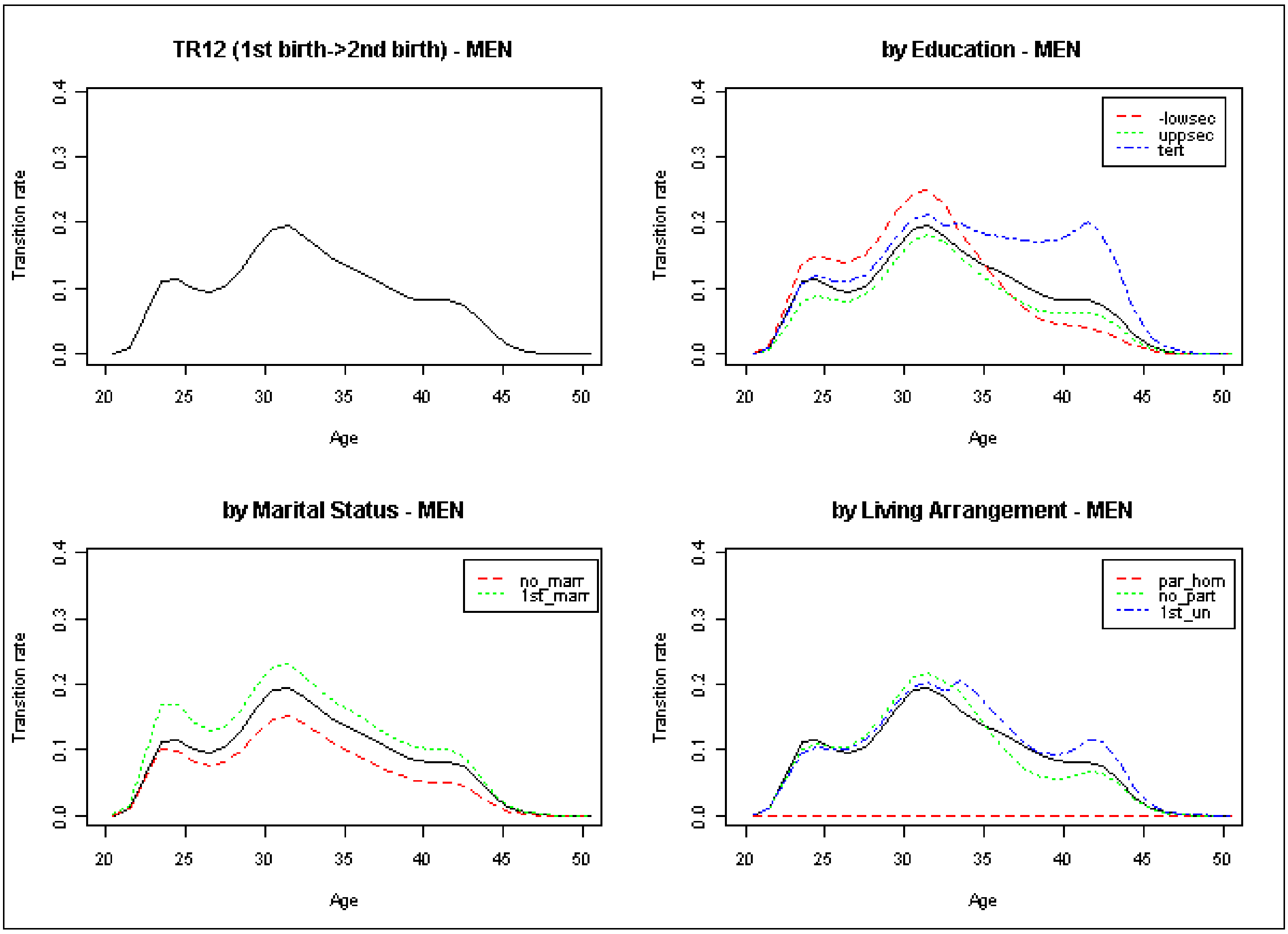
Number of events - WOMEN

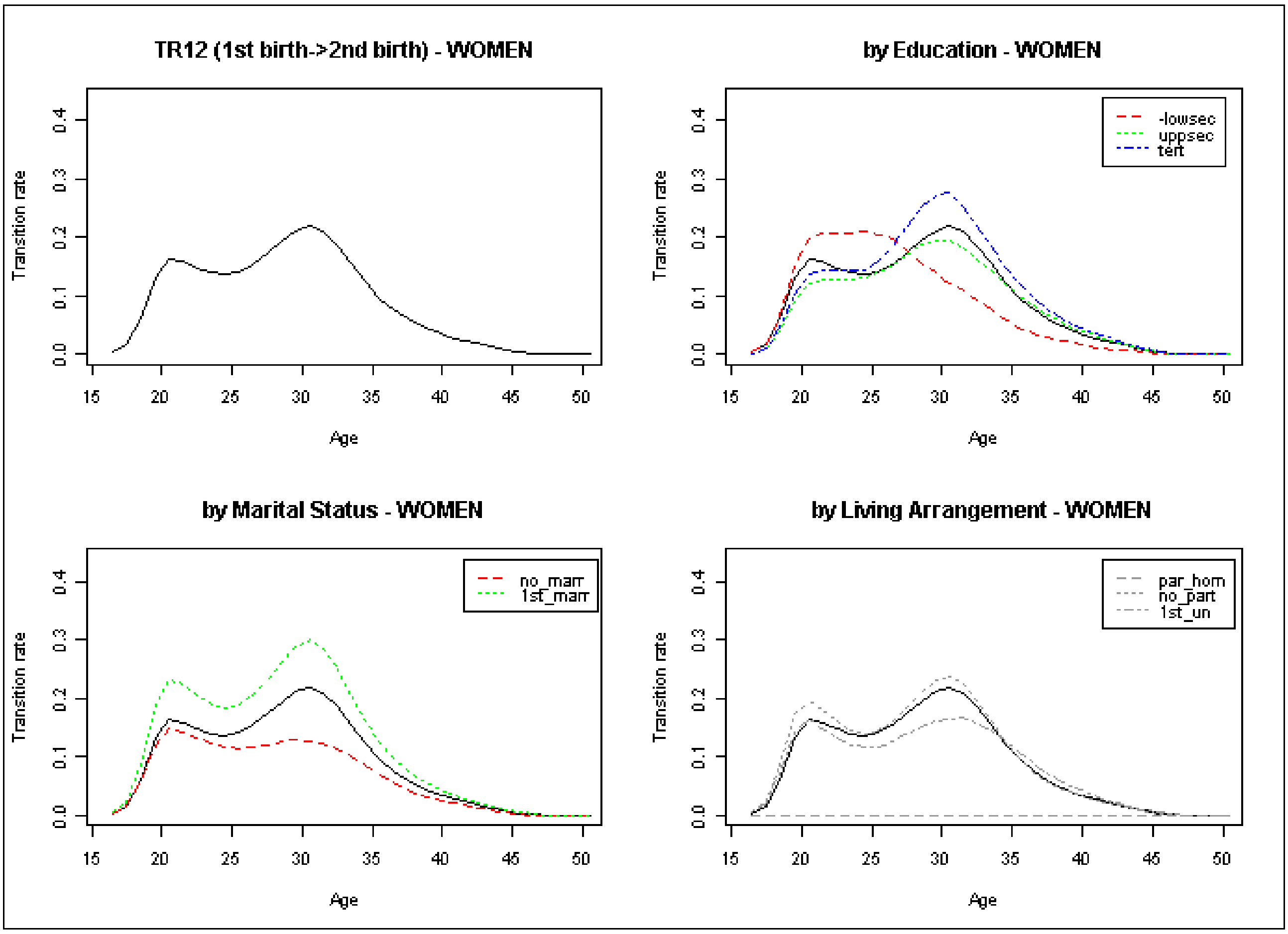
	int1	int2	int3	tot
prim	17	6	6	29
lowsec	5	2	1	8
uppsec	49	51	41	141
tert	31	66	38	135
no_marr	48	34	27	109
1st_mar	54	89	54	197
2nd mar	0	0	0	0
div/wid	0	2	4	6
par_hom	0	0	0	0
no_part	94	109	66	269
1st_un	8	15	20	43
tot	102	125	86	313

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec	tert	no_marr	1st_mar	par_hom	no_part	1st_un
16	0.0032	0.9891	0.6185	0.6844	0.9457	1.4758	0	1.7201	1.4235
17	0.0157	1.0281	0.6429	0.7113	0.9356	1.4601	0	1.5679	1.2976
18	0.0607	1.074	0.6716	0.7431	0.9263	1.4455	0	1.4311	1.1843
19	0.1326	1.1331	0.7086	0.784	0.9181	1.4327	0	1.3116	1.0854
20	0.1632	1.2089	0.756	0.8364	0.9106	1.4211	0	1.2121	1.003
21	0.1592	1.2995	0.8126	0.8991	0.9027	1.4087	0	1.1346	0.939
22	0.1483	1.3953	0.8725	0.9654	0.8924	1.3926	0	1.0795	0.8933
23	0.1394	1.4789	0.9248	1.0232	0.8776	1.3696	0	1.0438	0.8638
24	0.1368	1.5297	0.9566	1.0584	0.8573	1.3379	0	1.0222	0.8459
25	0.1416	1.4388	0.9883	1.138	0.8131	1.3332	0	1.0303	0.8331
26	0.1539	1.2799	0.9939	1.1969	0.7622	1.3295	0	1.0435	0.8202
27	0.1727	1.0405	0.9895	1.2652	0.7011	1.3449	0	1.0666	0.8036
28	0.1943	0.8115	0.9667	1.3004	0.6455	1.3618	0	1.0842	0.7842
29	0.2123	0.6596	0.9248	1.2808	0.6086	1.3661	0	1.0865	0.7661
30	0.2192	0.5503	0.8898	1.2587	0.584	1.3773	0	1.0906	0.7538
31	0.2102	0.5187	0.8736	1.206	0.595	1.3514	0	1.0635	0.7925
32	0.1869	0.5015	0.8801	1.186	0.6127	1.34	0	1.0506	0.8429
33	0.1559	0.4906	0.9177	1.192	0.6422	1.3242	0	1.0341	0.9275
34	0.1245	0.4841	0.9757	1.2155	0.6775	1.3034	0	1.0128	1.0305
35	0.0974	0.4823	1.0358	1.2468	0.7085	1.285	0	0.9925	1.1205
36	0.076	0.4843	1.0833	1.2762	0.7285	1.2722	0	0.9765	1.177
37	0.06	0.4823	1.1231	1.2957	0.7428	1.2494	0	0.9509	1.2218
38	0.0481	0.4857	1.1311	1.3049	0.7387	1.2425	0	0.9449	1.2141
39	0.0386	0.4852	1.13	1.3036	0.7302	1.2282	0	0.938	1.2053
40	0.0311	0.4823	1.1231	1.2957	0.719	1.2093	0	0.9346	1.2009
41	0.0247	0.4785	1.1145	1.2857	0.7065	1.1883	0	0.9359	1.2026
42	0.0188	0.4756	1.1075	1.2777	0.694	1.1673	0	0.9404	1.2084
43	0.0131	0.4746	1.1053	1.2751	0.6824	1.1478	0	0.9447	1.2139
44	0.008	0.4769	1.1106	1.2812	0.6724	1.131	0	0.9456	1.215
45	0.004	0.4837	1.1265	1.2996	0.6647	1.1181	0	0.9418	1.2101
46	0.0017	0.4964	1.1561	1.3337	0.66	1.1102	0	0.9344	1.2007
47	6e-04	0.5158	1.2013	1.3859	0.6585	1.1077	0	0.9261	1.19

48	2e-04	0.5422	1.2627	1.4567	0.66	1.1102	0	0.9191	1.181
49	1e-04	0.5747	1.3384	1.5441	0.6637	1.1164	0	0.9142	1.1747
50	0	0.6116	1.4244	1.6433	0.6685	1.1244	0	0.9107	1.1702


TR12 (1st birth->2nd birth) - MEN
by Education - MEN
-lowsec
uppsec
tert
by Marital Status - MEN
no_marr
1st_marr
by Living Arrangement - MEN
par_hom
no_part
1st_un
Transition rate
Age
0.0
0.1
0.2
0.3
0.4
20
25
30
35
40
45
50


TR12 (1st birth->2nd birth) - WOMEN
by Education - WOMEN
-lowsec
uppsec
tert
by Marital Status - WOMEN
no_marr
1st_marr
by Living Arrangement - WOMEN
par_hom
no_part
1st_un
Transition rate
Age
0.0
0.1
0.2
0.3
0.4
15
20
25
30
35
40
45
50

TR13 (2st birth->3nd birth) - France

Parameters
wl= 10 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 30 lft= TRUE rgt= TRUE

Knots - MEN
33 36

Covariates - MEN

	code	ncat	pvalue
EDU	2	3	0.003
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	17	15	12	44
lowsec	5	3	9	17
uppsec	42	38	20	100
tert	12	26	33	71
no_marr	21	23	10	54
1st_mar	54	53	38	145
2nd mar	0	3	10	13
div/wid	2	4	16	22
par_hom	0	1	0	1
no_part	66	68	37	171
1st_un	10	14	37	61
tot	76	82	74	232

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec	tert
21	0.0012	1.1655	0.9217	0.8244
22	0.0074	1.1559	0.9142	0.8177
23	0.0354	1.149	0.9087	0.8128
24	0.0942	1.147	0.9071	0.8113
25	0.1356	1.1505	0.9099	0.8139
26	0.1449	1.1591	0.9166	0.8199
27	0.1359	1.1713	0.9263	0.8286
28	0.117	1.1863	0.9381	0.8391
29	0.0971	1.1776	0.9333	0.8987
30	0.0807	1.1693	0.9289	0.9613
31	0.0701	1.145	0.913	1.053
32	0.0649	1.1092	0.8888	1.1579
33	0.0634	1.0751	0.8653	1.2458
34	0.063	1.0507	0.8482	1.3
35	0.0604	1.023	0.8284	1.3494
36	0.0537	1.027	0.8058	1.386
37	0.0441	1.0308	0.7902	1.4134
38	0.0346	1.0375	0.7677	1.4558
39	0.0277	1.0445	0.7371	1.5087
40	0.0238	1.048	0.7007	1.5604
41	0.0223	1.0456	0.6643	1.5987
42	0.0217	1.0391	0.634	1.6203
43	0.0205	1.0337	0.6134	1.6325
44	0.0178	1.0372	0.5916	1.6668
45	0.0138	1.0442	0.5956	1.6781
46	0.0098	1.0567	0.6027	1.6982
47	0.0063	1.0685	0.6095	1.7171
48	0.0027	1.074	0.6126	1.7261
49	5e-04	1.0719	0.6114	1.7226

50	1e-04	1.065	0.6075	1.7115

Knots - WOMEN
30 34

Covariates - WOMEN

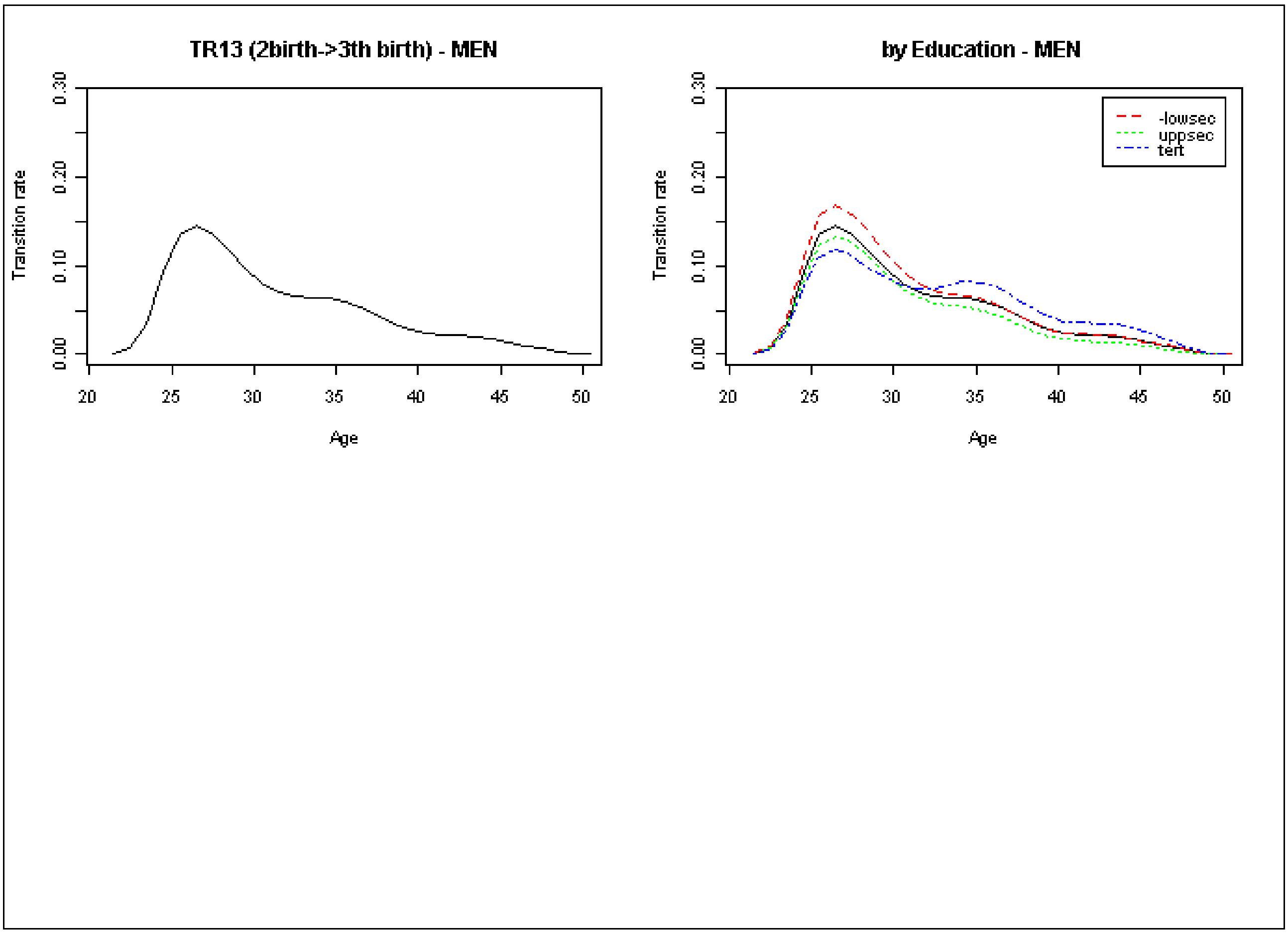
	code	ncat	pvalue
EDU	1	2	0.029
MAR	1	2	0.785
CHI	0	1	NA
LIV	0	1	NA

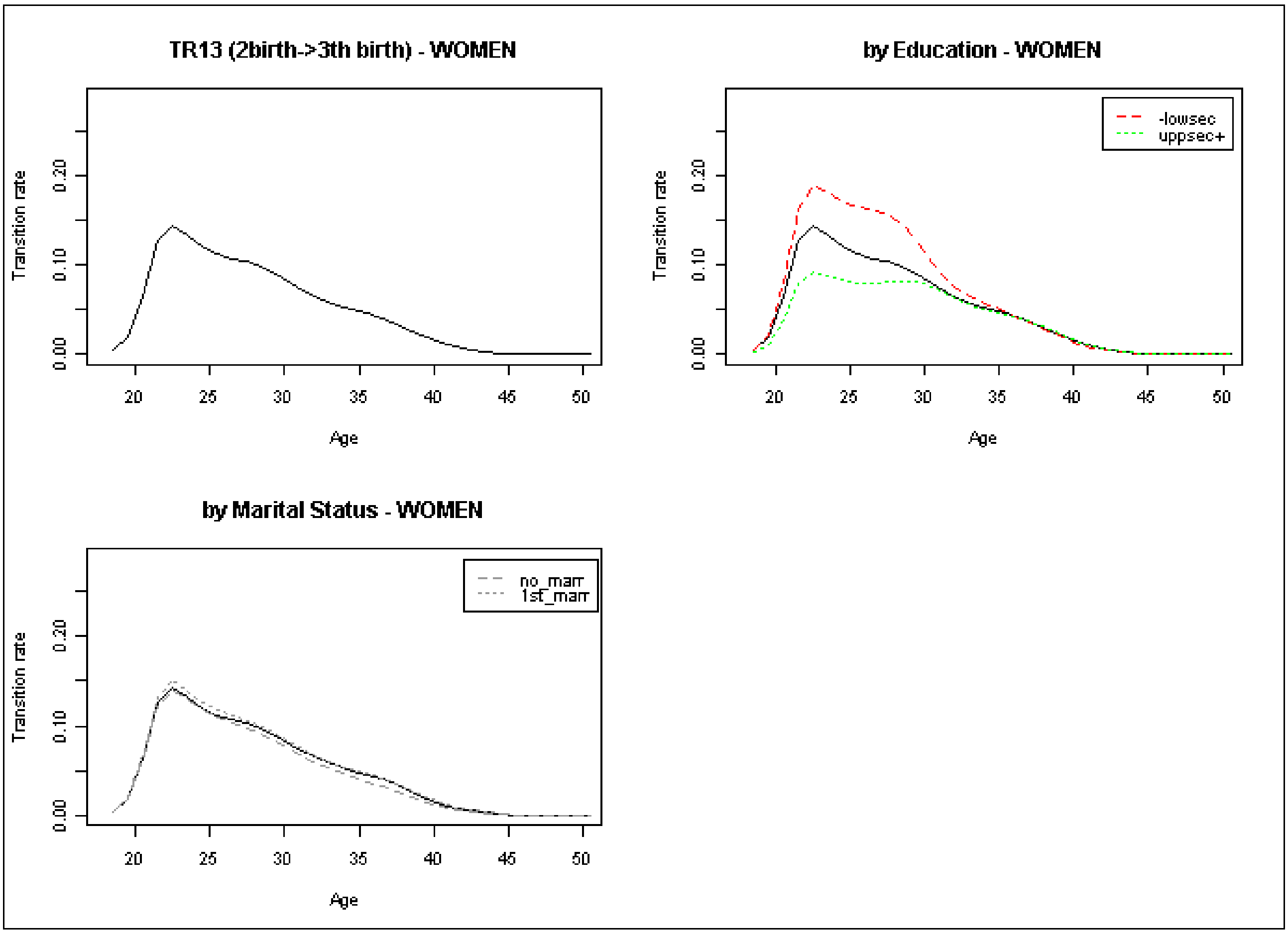
Number of events - WOMEN

	int1	int2	int3	tot
prim	27	9	10	46
lowsec	8	6	9	23
uppsec	32	51	29	112
tert	5	32	33	70
no_marr	26	17	12	55
1st_mar	43	77	57	177
2nd mar	0	3	6	9
div/wid	3	1	7	11
par_hom	0	0	0	0
no_part	67	85	64	216
1st_un	5	13	18	36
tot	72	98	82	252

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec+	no_marr	1st_mar
18	0.0044	1.1228	0.5489	0.9643	1.039
19	0.0188	1.1753	0.5746	0.9656	1.0404
20	0.0644	1.2269	0.5998	0.9679	1.0429
21	0.1263	1.2749	0.6233	0.9716	1.0468
22	0.1428	1.3191	0.6449	0.9756	1.0512
23	0.1322	1.3627	0.6662	0.9777	1.0534
24	0.1204	1.4095	0.6891	0.9758	1.0514
25	0.1121	1.4613	0.7144	0.9692	1.0443
26	0.1072	1.5147	0.7405	0.9595	1.0338
27	0.1032	1.5167	0.7923	0.9472	1.0255
28	0.0975	1.4884	0.8446	0.9371	1.0208
29	0.0892	1.405	0.9051	0.9293	1.0218
30	0.0791	1.3012	0.9517	0.924	1.0255
31	0.0693	1.2172	0.967	0.9195	1.0267
32	0.0611	1.1428	0.9702	0.9113	1.0225
33	0.055	1.0993	0.9636	0.8881	1.0228
34	0.0504	1.0631	0.9623	0.8598	1.0167
35	0.046	1.0247	0.9753	0.8237	1.015
36	0.0407	0.9865	0.996	0.7872	1.0182
37	0.034	0.9546	1.0135	0.7588	1.0227
38	0.0264	0.9321	1.022	0.7421	1.0269
39	0.0191	0.9104	1.0305	0.7303	1.0374
40	0.0129	0.9057	1.0252	0.7315	1.0392
41	0.0083	0.9029	1.022	0.7338	1.0424
42	0.0051	0.9015	1.0204	0.7361	1.0457
43	0.0029	0.9	1.0187	0.7383	1.0488
44	0.0015	0.8966	1.015	0.741	1.0526
45	6e-04	0.8905	1.008	0.7449	1.0582
46	2e-04	0.8818	0.9982	0.7502	1.0657
47	1e-04	0.872	0.987	0.7566	1.0747
48	0	0.8622	0.9759	0.7634	1.0845
49	0	0.8531	0.9657	0.7703	1.0943
50	0	0.8447	0.9562	0.7772	1.104


TR13 (2birth->3th birth) - MEN
Transition rate
Age
by Education - MEN
-lowsec
uppsec
tert
Transition rate
Age


TR13 (2birth->3th birth) - WOMEN
Transition rate
Age
by Education - WOMEN
-lowsec
uppsec+
Transition rate
Age
by Marital Status - WOMEN
no_marr
1st_marr
Transition rate
Age

TR14(3th birth->4th birth) - France

Parameters
wl= 10 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 20 lft= TRUE rgt= TRUE

Knots - MEN
36 40

Covariates - MEN

	code	ncat	pvalue
EDU	0	1	NA
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	3	5	5	13
lowsec	2	1	0	3
uppsec	18	13	6	37
tert	2	13	7	22
no_marr	6	8	2	16
1st_mar	17	20	12	49
2nd mar	1	4	3	8
div/wid	1	2	2	5
par_hom	0	0	0	0
no_part	21	19	9	49
1st_un	4	13	9	26
tot	25	33	18	76

Baseline and relative risks - MEN

age	baselin
23	0.001
24	0.005
25	0.0198
26	0.0453
27	0.0596
28	0.0629
29	0.0631
30	0.062
31	0.0606
32	0.059
33	0.057
34	0.0546
35	0.0518
36	0.0487
37	0.0451
38	0.0412
39	0.0371
40	0.033
41	0.029
42	0.0252
43	0.0217
44	0.0185
45	0.0157
46	0.0133
47	0.0113
48	0.0095
49	0.0074
50	5e-04

Knots - WOMEN
33 36

Covariates - WOMEN

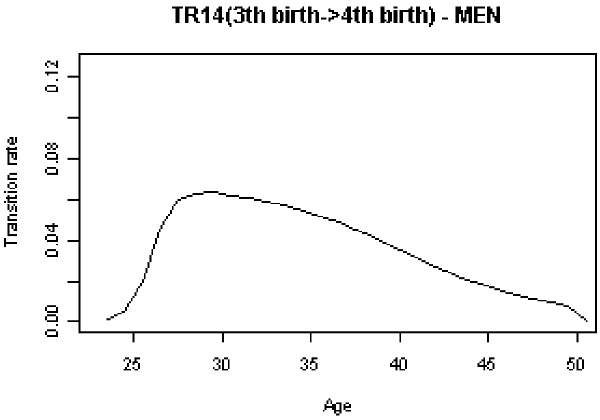
	code	ncat	pvalue
EDU	0	1	NA
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

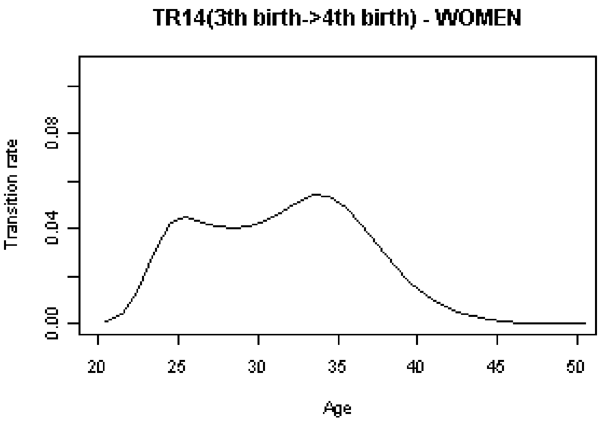
Number of events - WOMEN

	int1	int2	int3	tot
prim	14	9	5	28
lowsec	1	4	6	11
uppsec	4	16	5	25
tert	2	5	11	18
no_marr	8	2	4	14
1st_mar	13	28	20	61
2nd mar	0	2	2	4
div/wid	0	2	1	3
par_hom	0	0	0	0
no_part	19	28	21	68
1st_un	2	6	5	13
tot	21	34	27	81

Baseline and relative risks - WOMEN

age	baselin
20	0.0014
21	0.0046
22	0.0136
23	0.0299
24	0.0422
25	0.0445
26	0.0429
27	0.0413
28	0.0405
29	0.0413
30	0.0437
31	0.0474
32	0.0515
33	0.054
34	0.0535
35	0.049
36	0.0416
37	0.033
38	0.0247
39	0.0177
40	0.0122
41	0.0081
42	0.0052
43	0.0032
44	0.0019
45	0.001
46	4e-04
47	1e-04
48	0
49	0
50	0


TR14(3th birth->4th birth) - MEN
Transition rate
0.00
0.04
0.08
0.12
25
30
35
40
45
50
Age


TR14(3th birth->4th birth) - WOMEN
Transition rate
0.00
0.04
0.08
20
25
30
35
40
45
50
Age

6. Age profiles for Italy

Data for the Italian case come from the multipurpose survey called "Famiglia e soggetti sociali (FSS-IT)", associated with the Generations and Gender Programme. Carried out at the end of 2003, these data contain wide retrospective information on life course trajectories and transition to adulthood, including data on the history of marital unions, cohabitations (followed by a marriage or not) and marital disruption, for a large sample of the resident population. The retrospective nature of the survey makes it possible to update the collected information and to follow the same individual over time.

In the Italian dataset the main limit is the lack of dates relating to first union disruption (ydiss and mdiss) (table 13). This implies that TR9 and TR10 cannot be analyzed (see table 14). Consistency check (table 15) shows a lower number of inconsistent cases.

Table 13. Missing data in FSS-IT

```
> chkfile("ITALY.dat")
[1] _____________________________________________
[1] Check available data
[1] WARNING:mdiv missing
[1] WARNING:mved missing
[1] WARNING:meit missing
[1] WARNING:ydiss missing
[1] WARNING:mdiss missing
[1] _____________________________________________
```

Table 14 Transitions that can be analyzed with Italy FSS-IT

TR1 never-married → married (1st marriage)
TR2 married (1st marriage)→ divorced
TR3 married (1st marriage)→ widowed
TR4 divorced→ married (2nd marriage)
TR5 widowed→ married (2nd marriage)
TR6 at parental home (never in union) → first union
TR7 at parental home→ alone/with others (never in union)
TR8 alone/ with others (never in union) → first union
~~**TR9** first union→ separated (after 1st union disruption)~~
~~**TR10** alone or with other persons (after the 1st union disruption)→ with a partner (2nd union)~~
TR11 childless → child
TR12 1 child →2 children
TR13 2 children → 3 children
TR14 3 children → 4 children

Table 15. Consistency check on FSS-IT.

```
> consistency("ITALY.dat")
[1] Consistency check. File: ITALY.dat
[1] ____________________________________________
[1] 1st union<birth+14 - noc: 8
[1] 1st marriage<birth +14 - noc: 13
[1] divorce<=1st marriage - noc: 1
[1] death of spouse<=marriage - noc: 18
[1] 2nd union<=first union - noc: 2
[1] 1st child<birth + 14 - noc: 26
[1] 2nd child<1st child -  noc: 18
[1] 3rd child<2nd child - noc: 11
[1] 4th child<3rd child - noc: 5
[1] ____________________________________________
```

TR1 (never married->1st marriage) - Italy

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 30 lft= TRUE rgt= TRUE

Knots - MEN
29 33

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	1	2	0.025
LIV	2	3	0

Number of events - MEN

	int1	int2	int3	tot
prim	36	20	18	74
lowsec	229	207	144	580
uppsec	152	249	128	529
tert	15	96	81	192
no_ch	415	557	324	1296
1ch	14	14	31	59
2ch	2	1	9	12
3+ch	0	0	6	6
par_hom	290	385	193	868
no_part	109	148	161	418
partner	32	38	16	86
tot	431	572	371	1374

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert	noch	1+ch	par_hom	no_part	partner
15	0	2.7016	1.2445	0.6781	0.1994	0.9235	1.4265	0.9671	1.3676	2.075
16	0	2.7505	1.267	0.6904	0.203	0.9187	1.419	0.9582	1.355	2.0559
17	1e-04	2.7979	1.2888	0.7023	0.2065	0.9167	1.416	0.9508	1.3445	2.04
18	2e-04	2.8412	1.3088	0.7131	0.2097	0.9205	1.4218	0.9461	1.3379	2.03
19	8e-04	2.8781	1.3258	0.7224	0.2125	0.9319	1.4393	0.9449	1.3362	2.0273
20	0.002	2.9084	1.3397	0.73	0.2147	0.9507	1.4684	0.9465	1.3385	2.0308
21	0.004	2.9335	1.3513	0.7363	0.2165	0.9742	1.5048	0.949	1.3421	2.0363
22	0.0069	2.9563	1.3618	0.742	0.2182	0.9977	1.5411	0.9497	1.343	2.0377
23	0.0115	2.9804	1.3729	0.7481	0.22	1.0152	1.568	0.9452	1.3366	2.028
24	0.0182	3.0089	1.386	0.7552	0.2221	1.0211	1.5771	0.9328	1.3191	2.0014
25	0.0274	3.0432	1.4018	0.7638	0.2246	1.0125	1.5638	0.9113	1.2888	1.9554
26	0.0393	2.7943	1.3432	0.8142	0.3208	1.0143	1.4975	0.9372	1.2295	1.8296
27	0.0533	2.3581	1.235	0.8917	0.4784	1.0197	1.3994	0.9855	1.1527	1.6587
28	0.0675	1.7143	1.0712	0.9974	0.7024	1.0337	1.2807	1.056	1.064	1.4537
29	0.08	1.247	0.953	1.0757	0.8665	1.0332	1.1901	1.0843	0.9891	1.297
30	0.0888	0.9544	0.8792	1.1252	0.9696	1.0271	1.1308	1.0806	0.9295	1.1861
31	0.0928	0.9206	0.8776	1.1241	1.0441	0.9983	1.1335	1.0441	0.9261	1.0985
32	0.0922	0.8934	0.8736	1.1198	1.0943	0.9881	1.147	1.0132	0.9179	1.0332
33	0.0881	0.851	0.8658	1.1107	1.1663	0.9853	1.1822	0.9927	0.9272	0.9653
34	0.0818	0.7961	0.8555	1.0989	1.2592	0.9863	1.2353	0.9814	0.9518	0.8947
35	0.0748	0.737	0.8449	1.0868	1.361	0.9884	1.2978	0.9763	0.9844	0.8264
36	0.0677	0.6846	0.8364	1.0772	1.4544	0.9906	1.3579	0.9738	1.0152	0.7678
37	0.0611	0.6458	0.8314	1.0719	1.5282	0.992	1.4055	0.9716	1.038	0.7236
38	0.055	0.6216	0.8303	1.0711	1.5818	0.991	1.4354	0.9689	1.0516	0.6937
39	0.0496	0.5888	0.8304	1.0722	1.6601	0.9771	1.4598	0.9702	1.0756	0.6561
40	0.0446	0.5928	0.836	1.0794	1.6713	0.9729	1.4535	0.966	1.071	0.6533
41	0.04	0.5974	0.8424	1.0878	1.6843	0.9647	1.4412	0.9637	1.0685	0.6518
42	0.0357	0.6021	0.8491	1.0964	1.6976	0.9554	1.4272	0.963	1.0677	0.6513
43	0.0315	0.6066	0.8554	1.1046	1.7102	0.9471	1.4149	0.9634	1.0681	0.6515

44	0.0279	0.6107	0.8612	1.1121	1.7218	0.9415	1.4065	0.964	1.0687	0.6519
45	0.0246	0.6146	0.8667	1.1192	1.7328	0.9388	1.4025	0.964	1.0688	0.652
46	0.0216	0.6187	0.8724	1.1265	1.7442	0.9388	1.4025	0.963	1.0676	0.6512
47	0.0188	0.6232	0.8789	1.1349	1.7571	0.9407	1.4053	0.9605	1.0649	0.6496
48	0.0162	0.6288	0.8867	1.145	1.7728	0.9436	1.4096	0.9571	1.0611	0.6473
49	0.0136	0.6357	0.8964	1.1575	1.7922	0.9469	1.4146	0.9533	1.0569	0.6447
50	0.011	0.6441	0.9083	1.1729	1.8159	0.9503	1.4197	0.9499	1.0532	0.6424
51	0.0084	0.6541	0.9224	1.191	1.8441	0.9538	1.4248	0.9478	1.0508	0.641
52	0.006	0.6655	0.9385	1.2119	1.8764	0.9574	1.4303	0.9472	1.0502	0.6406
53	0.004	0.6783	0.9565	1.2351	1.9124	0.9615	1.4364	0.9483	1.0513	0.6413
54	0.0025	0.6922	0.9761	1.2604	1.9514	0.9662	1.4435	0.9504	1.0537	0.6427
55	0.0015	0.7069	0.9969	1.2872	1.993	0.9715	1.4514	0.953	1.0565	0.6445
56	9e-04	0.7223	1.0186	1.3153	2.0365	0.9773	1.46	0.9553	1.0591	0.646
57	5e-04	0.7383	1.0412	1.3444	2.0816	0.9835	1.4692	0.9568	1.0608	0.6471
58	3e-04	0.7548	1.0643	1.3743	2.1279	0.9899	1.4788	0.9573	1.0613	0.6474
59	2e-04	0.7716	1.088	1.4049	2.1753	0.9964	1.4886	0.9571	1.0611	0.6473
60	1e-04	0.7887	1.1123	1.4362	2.2237	1.0031	1.4985	0.9565	1.0604	0.6468

Knots - WOMEN
26 30

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	1	2	0
LIV	2	3	0

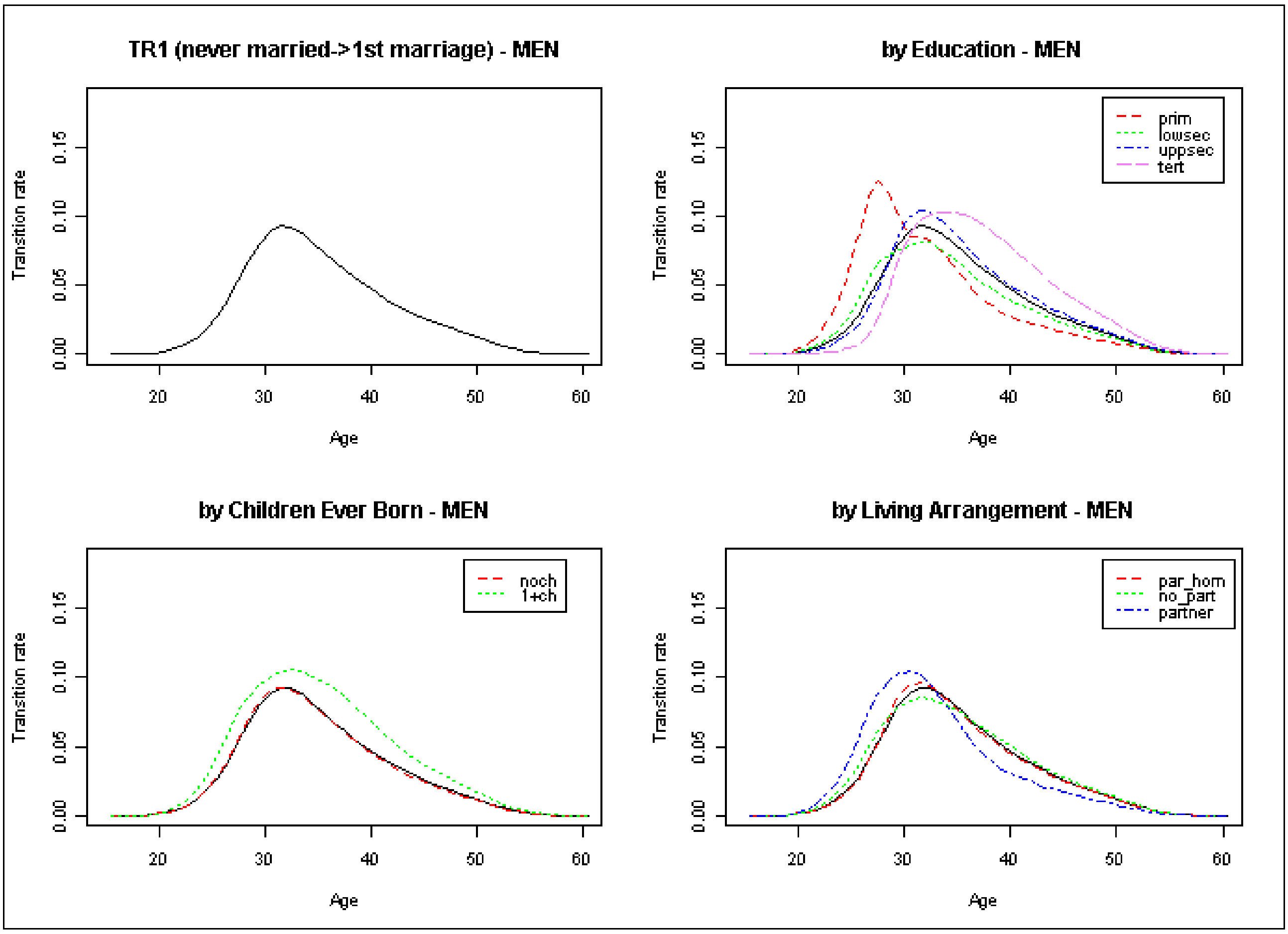
Number of events - WOMEN

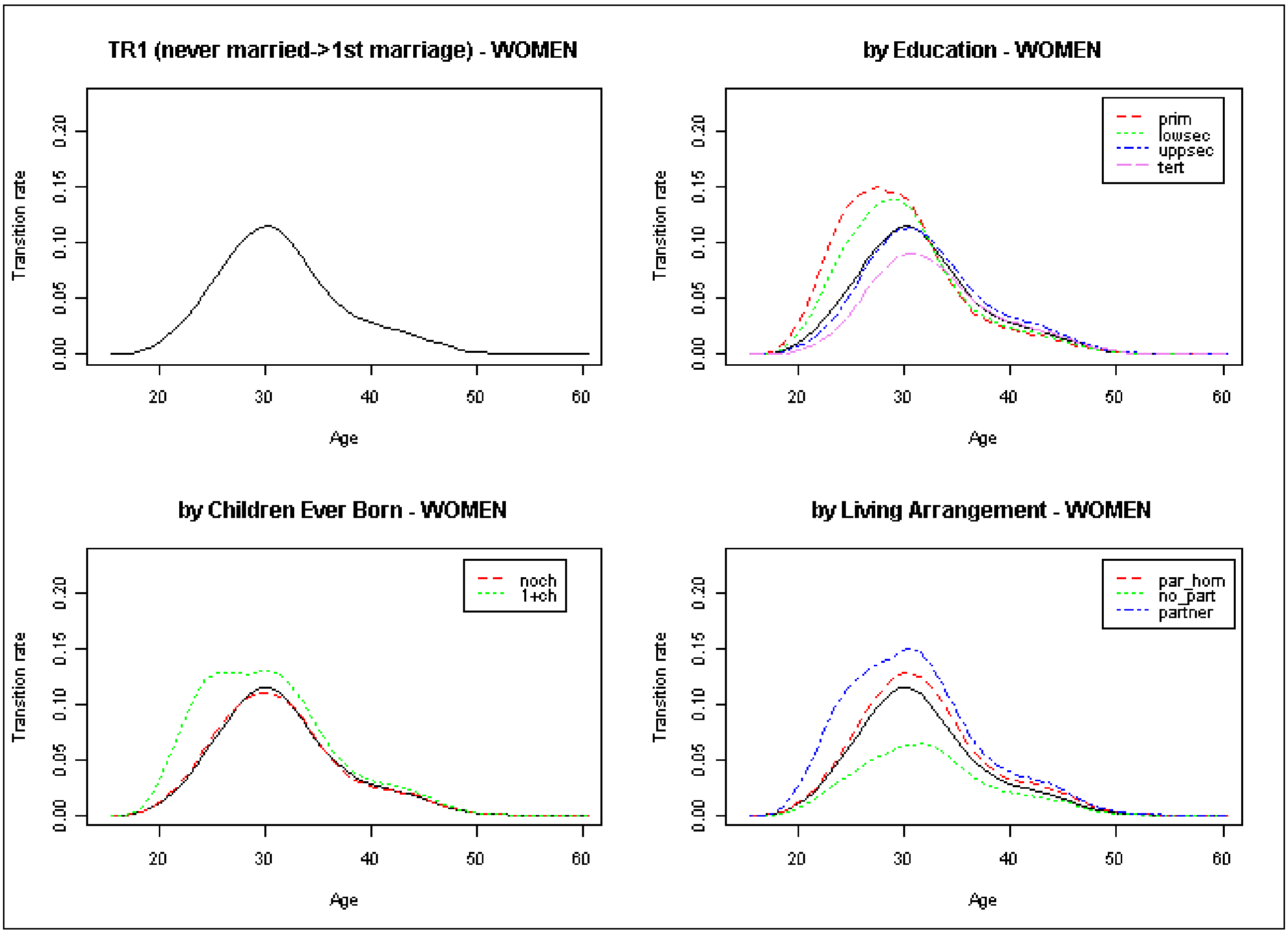
	int1	int2	int3	tot
prim	16	14	16	46
lowsec	190	188	100	478
uppsec	173	263	175	611
tert	22	122	101	245
no_ch	376	558	339	1273
1ch	20	23	41	84
2ch	5	5	9	19
3+ch	0	0	2	2
par_hom	341	465	230	1036
no_part	30	67	104	201
partner	30	54	57	141
tot	401	586	391	1378

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	noch	1+ch	par_hom	no_part	partner
15	0	2.1444	1.4871	0.5313	0.2959	0.7364	2.0683	0.8001	0.5008	1.909
16	1e-04	2.276	1.5784	0.564	0.3141	0.8026	2.2542	0.859	0.5377	2.0495
17	8e-04	2.4103	1.6715	0.5972	0.3326	0.8716	2.4481	0.9191	0.5753	2.1929
18	0.0034	2.5395	1.7611	0.6293	0.3505	0.9382	2.6351	0.9755	0.6106	2.3274
19	0.0078	2.6551	1.8413	0.6579	0.3664	0.9943	2.7927	1.0215	0.6394	2.4372
20	0.0138	2.7499	1.907	0.6814	0.3795	1.0303	2.8939	1.0502	0.6574	2.5057
21	0.0219	2.8195	1.9553	0.6986	0.3891	1.0379	2.9153	1.0566	0.6614	2.521
22	0.032	2.7045	1.9161	0.7455	0.4394	1.0745	2.7357	1.0847	0.6546	2.3923
23	0.0441	2.5615	1.8584	0.7873	0.4875	1.0767	2.4857	1.0902	0.6351	2.2213
24	0.0574	2.3083	1.7471	0.844	0.5574	1.0802	2.1455	1.1017	0.6094	1.9846
25	0.0714	1.9982	1.6062	0.905	0.6356	1.0757	1.7922	1.1136	0.5821	1.734
26	0.0852	1.7258	1.4776	0.9496	0.6965	1.0502	1.5053	1.1142	0.5569	1.5301
27	0.0978	1.539	1.3826	0.9677	0.7272	1.0097	1.3125	1.1052	0.5375	1.3982
28	0.1079	1.353	1.2848	0.9794	0.7523	0.9905	1.167	1.1152	0.5284	1.2992
29	0.1141	1.2687	1.2138	0.9892	0.7734	0.9596	1.1308	1.1042	0.5371	1.2862
30	0.115	1.1926	1.1486	0.9899	0.7845	0.9542	1.1247	1.1156	0.5546	1.2993
31	0.1102	1.1001	1.0713	1.0053	0.8121	0.967	1.1402	1.1375	0.5845	1.3246

32	0.1003	1.0006	0.9897	1.0341	0.8534	0.9879	1.1652	1.1618	0.6222	1.3526
33	0.0872	0.9114	0.9175	1.0676	0.8979	1.0056	1.1866	1.1819	0.6593	1.3756
34	0.0732	0.8468	0.8661	1.0977	0.9357	1.0111	1.1934	1.1934	0.6872	1.3887
35	0.0601	0.8098	0.8375	1.123	0.965	1.0005	1.1812	1.1943	0.7021	1.3896
36	0.0492	0.7723	0.8105	1.1626	1.0082	0.9769	1.1536	1.1805	0.711	1.3732
37	0.0408	0.7814	0.82	1.1763	1.02	0.9489	1.1205	1.1705	0.705	1.3616
38	0.0344	0.792	0.8311	1.1922	1.0339	0.9264	1.094	1.1626	0.7003	1.3525
39	0.03	0.8013	0.8409	1.2062	1.046	0.9181	1.0841	1.1648	0.7016	1.355
40	0.0269	0.807	0.8469	1.2149	1.0535	0.9283	1.0962	1.1818	0.7118	1.3748
41	0.0244	0.8083	0.8483	1.2168	1.0552	0.9567	1.1297	1.2141	0.7313	1.4124
42	0.022	0.8057	0.8455	1.2129	1.0518	0.9971	1.1774	1.2574	0.7574	1.4627
43	0.0194	0.8011	0.8407	1.206	1.0458	1.038	1.2257	1.3025	0.7845	1.5152
44	0.0164	0.7971	0.8365	1.1999	1.0405	1.0648	1.2574	1.3378	0.8058	1.5563
45	0.0131	0.796	0.8354	1.1983	1.0392	1.065	1.2576	1.3526	0.8147	1.5735
46	0.0099	0.7995	0.8391	1.2036	1.0437	1.034	1.221	1.3417	0.8082	1.5609
47	0.007	0.808	0.848	1.2164	1.0548	0.978	1.1548	1.3077	0.7877	1.5213
48	0.0048	0.8206	0.8612	1.2353	1.0712	0.911	1.0758	1.2601	0.759	1.4658
49	0.0031	0.8352	0.8765	1.2573	1.0904	0.849	1.0026	1.2117	0.7298	1.4096
50	0.002	0.8494	0.8914	1.2787	1.1089	0.8043	0.9497	1.1746	0.7075	1.3664
51	0.0013	0.8608	0.9033	1.2958	1.1237	0.7839	0.9257	1.1572	0.697	1.3462
52	9e-04	0.8677	0.9106	1.3062	1.1327	0.7903	0.9333	1.1636	0.7009	1.3536
53	6e-04	0.8699	0.9129	1.3096	1.1356	0.8217	0.9703	1.1933	0.7188	1.3882
54	4e-04	0.8686	0.9115	1.3076	1.1339	0.8724	1.0302	1.242	0.7481	1.4449
55	3e-04	0.8656	0.9083	1.303	1.1299	0.933	1.1017	1.3021	0.7843	1.5148
56	2e-04	0.8628	0.9054	1.2988	1.1263	0.9919	1.1712	1.3645	0.8219	1.5873
57	2e-04	0.8617	0.9043	1.2971	1.1249	1.0386	1.2265	1.421	0.8559	1.6531
58	1e-04	0.8628	0.9055	1.2989	1.1264	1.0683	1.2615	1.4674	0.8839	1.7071
59	1e-04	0.8659	0.9088	1.3036	1.1304	1.0831	1.279	1.5046	0.9062	1.7503
60	1e-04	0.87	0.9131	1.3097	1.1358	1.0903	1.2874	1.5369	0.9257	1.7879


TR1 (never married->1st marriage) - MEN
by Education - MEN
prim
lowsec
uppsec
tert
by Children Ever Born - MEN
noch
1+ch
by Living Arrangement - MEN
par_hom
no_part
partner
Transition rate
Age
0.00
0.05
0.10
0.15
20
30
40
50
60


TR1 (never married->1st marriage) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec
tert
by Children Ever Born - WOMEN
noch
1+ch
by Living Arrangement - WOMEN
par_hom
no_part
partner
Transition rate
Age
0.00
0.05
0.10
0.15
0.20
20
30
40
50
60

TR2 (1st marriage->divorce) - Italy

Parameters
wl= 10 minage= 15 maxage= 80 outf= TRUE cpa= TRUE nmin= 20 lft= TRUE rgt= TRUE

Knots - MEN
37 46

Covariates - MEN

	code	ncat	pvalue
EDU	1	2	0.033
MAR	0	1	NA
CHI	2	3	0
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	3	5	21	29
lowsec	32	32	17	81
uppsec	14	27	14	55
tert	5	10	9	24
no_ch	20	20	10	50
1ch	22	24	15	61
2ch	8	24	23	55
3+ch	2	5	14	21
tot	53	73	61	188

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec+	no_ch	1ch	2+ch
18	0	1.0041	0.8761	0.8456	0.7597	0.4564
19	1e-04	1.0074	0.879	0.8663	0.7783	0.4675
20	1e-04	1.0108	0.8819	0.8875	0.7973	0.4789
21	3e-04	1.0142	0.8849	0.9091	0.8167	0.4906
22	7e-04	1.0175	0.8878	0.9313	0.8366	0.5026
23	0.0012	1.0209	0.8907	0.954	0.857	0.5148
24	0.0016	1.0243	0.8937	0.9774	0.878	0.5274
25	0.002	1.0276	0.8966	1.0015	0.8997	0.5405
26	0.0021	1.031	0.8996	1.0267	0.9223	0.5541
27	0.0022	1.0344	0.9025	1.0531	0.9461	0.5683
28	0.0022	1.0377	0.9054	1.081	0.9711	0.5834
29	0.0023	1.0411	0.9084	1.1107	0.9978	0.5994
30	0.0023	1.0445	0.9113	1.1424	1.0263	0.6165
31	0.0023	1.0262	0.9385	1.2677	1.039	0.6149
32	0.0023	1.0176	0.9549	1.359	1.0611	0.6226
33	0.0023	1.0038	0.9771	1.4787	1.0803	0.626
34	0.0023	0.9847	1.0056	1.6308	1.0958	0.6241
35	0.0023	0.9612	1.0391	1.813	1.1078	0.6173
36	0.0023	0.9359	1.0749	2.0145	1.1182	0.6077
37	0.0023	0.9122	1.1092	2.2188	1.1294	0.5986
38	0.0023	0.8929	1.139	2.4107	1.144	0.5927
39	0.0022	0.8792	1.1633	2.5812	1.1629	0.5916
40	0.0022	0.8707	1.1822	2.7281	1.1855	0.5951
41	0.0022	0.8523	1.2128	2.9325	1.1953	0.5849
42	0.0022	0.845	1.2383	2.9995	1.2145	0.6103
43	0.0021	0.8457	1.2512	3.0684	1.2397	0.6283
44	0.0021	0.8457	1.2664	3.1296	1.261	0.6461
45	0.002	0.8448	1.2841	3.1822	1.2777	0.6635
46	0.0019	0.8429	1.3044	3.2256	1.2897	0.6807
47	0.0018	0.8399	1.3275	3.2596	1.2969	0.6975
48	0.0018	0.836	1.353	3.2845	1.2994	0.7137
49	0.0017	0.8316	1.3803	3.3009	1.2979	0.7292

50	0.0016	0.8269	1.4087	3.3099	1.2932	0.7435
51	0.0015	0.8226	1.4372	3.3128	1.2862	0.7562
52	0.0014	0.819	1.4651	3.3107	1.2778	0.7671
53	0.0013	0.8164	1.4916	3.3048	1.2687	0.7758
54	0.0012	0.8151	1.5164	3.296	1.2595	0.7825
55	0.0011	0.8151	1.5392	3.2849	1.2504	0.787
56	0.001	0.8163	1.5601	3.272	1.2416	0.7897
57	0.001	0.8185	1.5793	3.2574	1.233	0.7908
58	9e-04	0.812	1.6133	3.2317	1.2138	0.7986
59	8e-04	0.8182	1.6257	3.2165	1.2081	0.7948
60	7e-04	0.8244	1.6381	3.199	1.2015	0.7905
61	7e-04	0.8307	1.6504	3.1793	1.1941	0.7856
62	6e-04	0.8368	1.6627	3.1572	1.1858	0.7802
63	6e-04	0.843	1.6749	3.1327	1.1766	0.7741
64	5e-04	0.8491	1.6871	3.1059	1.1665	0.7675
65	5e-04	0.8552	1.6993	3.0767	1.1556	0.7603
66	4e-04	0.8613	1.7114	3.0452	1.1437	0.7525
67	4e-04	0.8675	1.7235	3.0116	1.1311	0.7442
68	3e-04	0.8736	1.7357	2.976	1.1178	0.7354
69	3e-04	0.8797	1.7479	2.9389	1.1038	0.7262
70	2e-04	0.8858	1.7601	2.9006	1.0894	0.7168
71	2e-04	0.892	1.7723	2.8613	1.0747	0.707
72	1e-04	0.8982	1.7846	2.8214	1.0597	0.6972
73	1e-04	0.9044	1.797	2.7814	1.0447	0.6873
74	0	0.9107	1.8095	2.7414	1.0297	0.6774
75	0	0.917	1.822	2.7018	1.0148	0.6676
76	0	0.9233	1.8346	2.6626	1	0.6579
77	0	0.9297	1.8472	2.6239	0.9855	0.6484
78	0	0.9361	1.86	2.5858	0.9712	0.639
79	0	0.9426	1.8728	2.5483	0.9571	0.6297
80	0	0.9491	1.8858	2.5114	0.9432	0.6206

Knots - WOMEN
37 44

Covariates - WOMEN

	code	ncat	pvalue
EDU	1	2	0
MAR	0	1	NA
CHI	2	3	0
LIV	0	1	NA

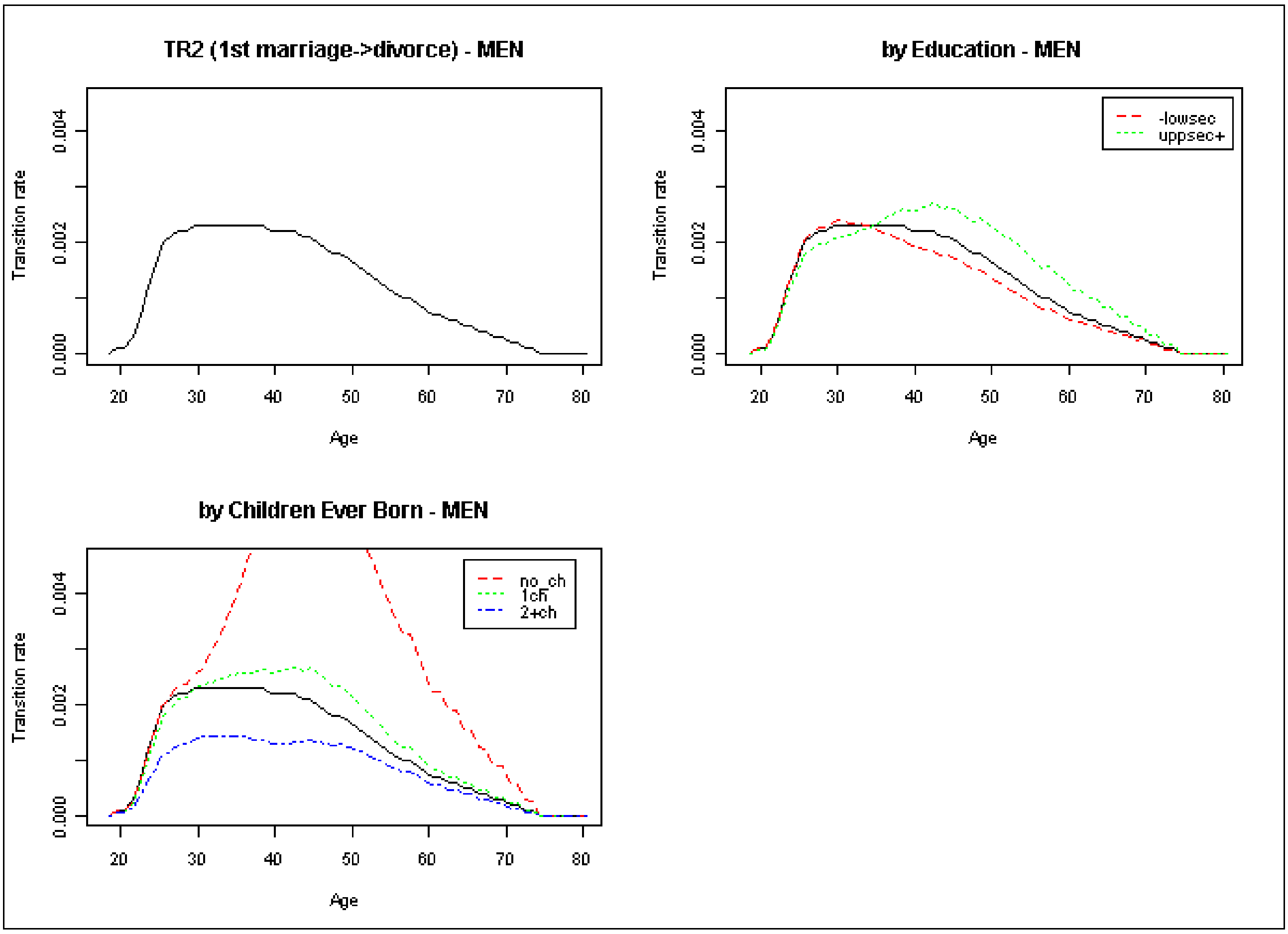
Number of events - WOMEN

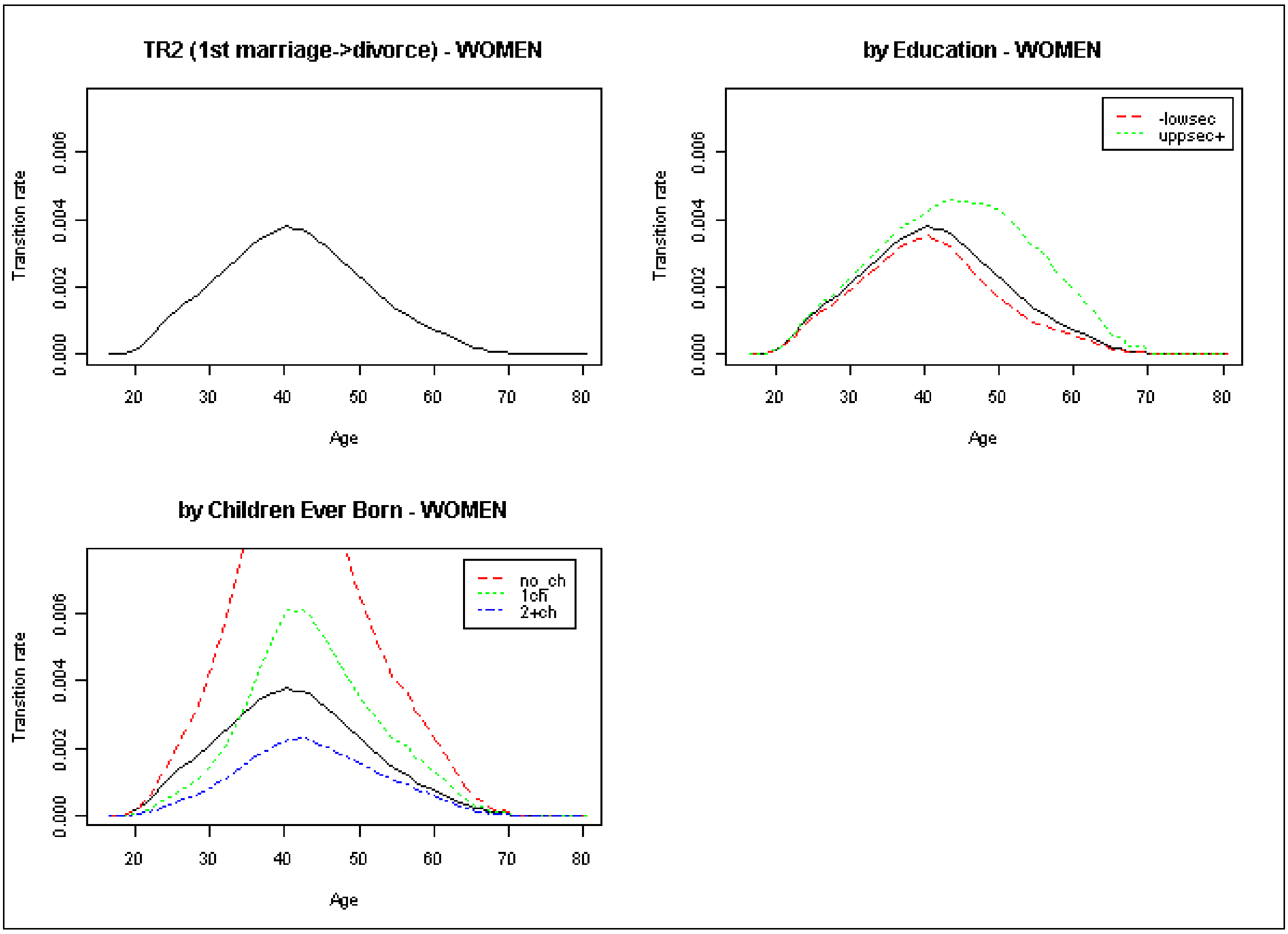
	int1	int2	int3	tot
prim	4	7	18	29
lowsec	42	51	24	117
uppsec	38	27	31	96
tert	6	18	11	35
no_ch	44	26	9	79
1ch	25	36	29	90
2ch	20	32	30	82
3+ch	1	9	17	27
tot	90	103	84	277

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec+	no_ch	1ch	2+ch
16	0	0.8973	1.0546	0.8892	0.3038	0.1731
17	0	0.8987	1.0563	0.941	0.3215	0.1832
18	0	0.9002	1.058	0.9959	0.3403	0.1939
19	1e-04	0.9016	1.0597	1.0543	0.3602	0.2052
20	2e-04	0.9031	1.0614	1.1165	0.3815	0.2173
21	4e-04	0.9045	1.063	1.1831	0.4042	0.2303

22	6e-04	0.9059	1.0647	1.2546	0.4287	0.2442
23	9e-04	0.9073	1.0664	1.3316	0.455	0.2592
24	0.0011	0.9087	1.068	1.4147	0.4834	0.2754
25	0.0013	0.9101	1.0697	1.5047	0.5141	0.2929
26	0.0015	0.9115	1.0713	1.6021	0.5474	0.3119
27	0.0016	0.9129	1.0729	1.7078	0.5835	0.3324
28	0.0018	0.9143	1.0746	1.8225	0.6227	0.3548
29	0.002	0.9157	1.0763	1.9469	0.6652	0.379
30	0.0022	0.9173	1.0781	2.0815	0.7112	0.4052
31	0.0024	0.9185	1.0805	2.2057	0.7838	0.4268
32	0.0026	0.92	1.0829	2.3453	0.8537	0.452
33	0.0028	0.9215	1.0857	2.4847	0.9362	0.4762
34	0.003	0.9231	1.0888	2.6203	1.0323	0.4982
35	0.0032	0.9249	1.0923	2.7496	1.1393	0.518
36	0.0034	0.9269	1.0961	2.8723	1.2504	0.5359
37	0.0035	0.9292	1.1001	2.9888	1.3566	0.5529
38	0.0036	0.932	1.1044	3.097	1.4502	0.5691
39	0.0037	0.9354	1.109	3.1923	1.527	0.5838
40	0.0038	0.9391	1.1145	3.2488	1.6072	0.5896
41	0.0037	0.909	1.1902	3.2666	1.6333	0.6116
42	0.0037	0.9	1.2262	3.2805	1.6475	0.6221
43	0.0036	0.8871	1.2735	3.2619	1.6478	0.6292
44	0.0034	0.8697	1.3341	3.2149	1.6365	0.6336
45	0.0032	0.8478	1.4088	3.1466	1.6169	0.6367
46	0.003	0.8221	1.4967	3.0662	1.5929	0.6394
47	0.0028	0.7946	1.5951	2.9838	1.5689	0.6426
48	0.0026	0.7677	1.6992	2.9095	1.5486	0.6471
49	0.0024	0.7441	1.8044	2.8515	1.5354	0.6535
50	0.0022	0.7257	1.9064	2.8154	1.5315	0.6622
51	0.002	0.7135	2.003	2.8039	1.5383	0.6736
52	0.0018	0.7077	2.0931	2.8168	1.5557	0.6881
53	0.0016	0.7074	2.177	2.8512	1.5828	0.7052
54	0.0014	0.6818	2.3151	2.8713	1.6141	0.7322
55	0.0013	0.698	2.3701	2.9404	1.6529	0.7498
56	0.0012	0.714	2.4244	3.0076	1.6907	0.7669
57	0.001	0.7293	2.4764	3.0636	1.7222	0.7812
58	9e-04	0.7435	2.5245	3.0989	1.742	0.7902
59	8e-04	0.7561	2.5674	3.1047	1.7453	0.7917
60	7e-04	0.7669	2.6042	3.0747	1.7284	0.784
61	6e-04	0.7758	2.6342	3.006	1.6898	0.7665
62	5e-04	0.7825	2.6571	2.8997	1.6301	0.7394
63	4e-04	0.7872	2.6731	2.7606	1.5519	0.704
64	3e-04	0.79	2.6827	2.5961	1.4594	0.662
65	2e-04	0.7912	2.6866	2.4152	1.3577	0.6159
66	2e-04	0.791	2.6859	2.2269	1.2518	0.5679
67	1e-04	0.7897	2.6816	2.039	1.1462	0.5199
68	1e-04	0.7876	2.6745	1.8576	1.0443	0.4737
69	1e-04	0.7851	2.6657	1.6871	0.9484	0.4302
70	0	0.7822	2.6559	1.5297	0.8599	0.3901
71	0	0.7791	2.6455	1.3863	0.7793	0.3535
72	0	0.776	2.635	1.2567	0.7065	0.3205
73	0	0.7729	2.6246	1.1401	0.6409	0.2907
74	0	0.7699	2.6143	1.0353	0.582	0.264
75	0	0.767	2.6043	0.941	0.529	0.24
76	0	0.7641	2.5945	0.8559	0.4811	0.2183
77	0	0.7612	2.5848	0.7789	0.4379	0.1986
78	0	0.7584	2.5752	0.7091	0.3987	0.1808
79	0	0.7556	2.5657	0.6457	0.363	0.1647
80	0	0.7528	2.5562	0.588	0.3306	0.1499


TR2 (1st marriage->divorce) - MEN
by Education - MEN
by Children Ever Born - MEN
Transition rate
Age
0.000
0.002
0.004
20
30
40
50
60
70
80
-lowsec
uppsec+
no_ch
1ch
2+ch


TR2 (1st marriage->divorce) - WOMEN
by Education - WOMEN
by Children Ever Born - WOMEN
Transition rate
Age
0.000
0.002
0.004
0.006
20
30
40
50
60
70
80
-lowsec
uppsec+
no_ch
1ch
2+ch

TR3 (1st marriage->death of spouse) - Italy

Parameters
wl= 10 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= FALSE

Knots - MEN
62 73

Covariates - MEN

	code	ncat	pvalue
EDU	3	3	0
MAR	0	1	NA
CHI	3	4	0.008
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	69	90	106	265
lowsec	31	28	6	65
uppsec	15	18	6	39
tert	6	8	3	17
no_ch	11	8	8	27
1ch	31	33	20	84
2ch	48	56	28	132
3+ch	32	47	65	144
tot	122	144	121	387

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec+	no_ch	1ch	2ch	3+ch
18	5e-04	1.6681	0.7373	0.6904	1.3286	0.9221	0.7736	0.8994
19	3e-04	1.768	0.7815	0.7317	1.2774	0.8866	0.7438	0.8647
20	2e-04	1.8718	0.8274	0.7747	1.2295	0.8533	0.7159	0.8323
21	1e-04	1.9762	0.8735	0.8179	1.1866	0.8236	0.6909	0.8032
22	1e-04	2.0766	0.9179	0.8594	1.1504	0.7984	0.6698	0.7787
23	1e-04	2.1676	0.9581	0.8971	1.1224	0.779	0.6536	0.7598
24	1e-04	2.244	0.9919	0.9287	1.104	0.7662	0.6428	0.7473
25	1e-04	2.3013	1.0172	0.9525	1.0957	0.7605	0.638	0.7418
26	1e-04	2.3368	1.0329	0.9671	1.0981	0.7622	0.6394	0.7434
27	1e-04	2.3496	1.0385	0.9724	1.1109	0.7711	0.6469	0.752
28	1e-04	2.3412	1.0348	0.969	1.1337	0.7868	0.6601	0.7674
29	1e-04	2.3151	1.0233	0.9582	1.1652	0.8087	0.6785	0.7888
30	1e-04	2.276	1.006	0.942	1.204	0.8356	0.7011	0.815
31	1e-04	2.2293	0.9854	0.9227	1.2479	0.8661	0.7266	0.8448
32	1e-04	2.1803	0.9637	0.9024	1.2946	0.8985	0.7538	0.8763
33	2e-04	2.1336	0.9431	0.883	1.3411	0.9308	0.7809	0.9079
34	2e-04	2.0928	0.925	0.8662	1.3849	0.9612	0.8064	0.9375
35	3e-04	2.0605	0.9108	0.8528	1.4233	0.9879	0.8288	0.9635
36	3e-04	2.0379	0.9008	0.8434	1.4546	1.0096	0.847	0.9847
37	4e-04	2.025	0.8951	0.8381	1.4776	1.0256	0.8604	1.0003
38	4e-04	2.0207	0.8932	0.8363	1.4924	1.0358	0.869	1.0102
39	5e-04	2.0229	0.8941	0.8372	1.4995	1.0408	0.8732	1.0151
40	5e-04	2.0287	0.8967	0.8396	1.5008	1.0416	0.8739	1.0159
41	5e-04	2.0346	0.8993	0.8421	1.498	1.0397	0.8723	1.0141
42	6e-04	2.0367	0.9003	0.843	1.4935	1.0366	0.8697	1.011
43	6e-04	2.0315	0.8979	0.8408	1.4893	1.0337	0.8672	1.0082
44	6e-04	2.0158	0.891	0.8343	1.4871	1.0321	0.8659	1.0067
45	7e-04	1.9876	0.8785	0.8226	1.4881	1.0328	0.8665	1.0073
46	7e-04	1.9465	0.8604	0.8056	1.4929	1.0361	0.8693	1.0106
47	8e-04	1.8933	0.8369	0.7836	1.5015	1.0421	0.8743	1.0164
48	9e-04	1.8304	0.8091	0.7576	1.5134	1.0504	0.8812	1.0245
49	0.0011	1.7612	0.7785	0.7289	1.5273	1.0601	0.8893	1.0339

50	0.0012	1.6898	0.7469	0.6994	1.5418	1.0701	0.8978	1.0437
51	0.0015	1.6202	0.7161	0.6706	1.5549	1.0792	0.9054	1.0526
52	0.0017	1.4963	0.7001	0.6715	1.4987	1.1118	0.9411	1.0696
53	0.0021	1.4259	0.679	0.6557	1.4834	1.1231	0.9532	1.0762
54	0.0024	1.3631	0.6636	0.6465	1.457	1.1321	0.9639	1.0794
55	0.0028	1.309	0.6551	0.6448	1.4187	1.1383	0.9729	1.0787
56	0.0031	1.2638	0.654	0.6515	1.3683	1.1416	0.9802	1.074
57	0.0035	1.2271	0.6607	0.6672	1.3072	1.1423	0.9859	1.0659
58	0.0038	1.1982	0.6753	0.6921	1.2377	1.1408	0.9901	1.0548
59	0.004	1.1762	0.6975	0.726	1.1631	1.1376	0.9931	1.0417
60	0.0042	1.1601	0.7264	0.7679	1.0873	1.1332	0.995	1.0275
61	0.0043	1.149	0.7608	0.8163	1.0137	1.128	0.996	1.013
62	0.0044	1.1416	0.7988	0.8688	0.9455	1.1225	0.9963	0.9991
63	0.0045	1.1365	0.838	0.9225	0.8849	1.1172	0.9961	0.9863
64	0.0047	1.1321	0.8755	0.9738	0.833	1.1124	0.9958	0.9753
65	0.0049	1.1263	0.9083	1.019	0.79	1.1086	0.9956	0.9661
66	0.0052	1.1169	0.9335	1.0546	0.7553	1.1057	0.9956	0.959
67	0.0055	1.102	0.9486	1.0777	0.7279	1.1038	0.996	0.9536
68	0.006	1.08	0.9522	1.0866	0.7066	1.1026	0.9966	0.9497
69	0.0066	0.9978	0.9547	1.1049	0.6493	1.1175	1.0155	0.953
70	0.0074	1.0366	0.8986	1.0768	0.6548	1.084	0.9859	1.0068
71	0.0083	1.029	0.854	1.0401	0.6557	1.0666	0.9704	1.0284
72	0.0093	1.0214	0.7997	0.9959	0.6577	1.0444	0.9507	1.0585
73	0.0104	1.0163	0.7384	0.9473	0.6606	1.0166	0.9261	1.0977
74	0.0115	1.0149	0.6741	0.8978	0.6643	0.9834	0.8967	1.1452
75	0.0128	1.0167	0.6105	0.8502	0.6685	0.9465	0.864	1.1984
76	0.0139	1.0204	0.5518	0.8069	0.6727	0.9084	0.8303	1.253
77	0.0151	1.0242	0.501	0.7697	0.6767	0.8724	0.7983	1.3045
78	0.0162	1.0276	0.4599	0.7397	0.6802	0.841	0.7705	1.3494
79	0.0172	1.0313	0.4287	0.7174	0.6833	0.8159	0.7483	1.3864
80	0.0181	1.0366	0.4068	0.7027	0.6864	0.7975	0.7319	1.4163
81	0.0191	1.0451	0.393	0.6955	0.6898	0.7853	0.7212	1.4407
82	0.0201	1.0857	0.3706	0.6938	0.6993	0.76	0.699	1.4991
83	0.0212	1.094	0.3735	0.6992	0.7024	0.7633	0.7021	1.5057
84	0.0225	1.109	0.3786	0.7087	0.7064	0.7677	0.7061	1.5143
85	0.0241	1.1282	0.3851	0.721	0.7107	0.7724	0.7104	1.5235
86	0.026	1.1486	0.3921	0.734	0.7143	0.7763	0.714	1.5312
87	0.0283	1.1671	0.3984	0.7458	0.7161	0.7782	0.7158	1.535
88	0.0312	1.1802	0.4029	0.7542	0.715	0.777	0.7146	1.5326
89	0.0346	1.185	0.4045	0.7573	0.7099	0.7714	0.7095	1.5217
90	0.0386	1.179	0.4025	0.7535	0.7	0.7608	0.6997	1.5006
91	0.0434	1.1609	0.3963	0.7419	0.6851	0.7445	0.6848	1.4685
92	0.0491	1.1305	0.3859	0.7224	0.665	0.7227	0.6647	1.4256
93	0.0556	1.0888	0.3717	0.6958	0.6404	0.696	0.6401	1.3728
94	0.0632	1.038	0.3543	0.6633	0.6121	0.6652	0.6118	1.3121
95	0.0719	0.9809	0.3348	0.6269	0.5813	0.6317	0.581	1.246
96	0.0818	0.9205	0.3142	0.5882	0.5492	0.5968	0.5489	1.1772
97	0.0931	0.8595	0.2934	0.5493	0.517	0.5618	0.5168	1.1082
98	0.1061	0.8003	0.2732	0.5114	0.4857	0.5278	0.4855	1.0411
99	0.1208	0.7443	0.2541	0.4756	0.4559	0.4954	0.4556	0.9772

Knots - WOMEN
62 71

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	3	4	0.502
LIV	0	1	NA

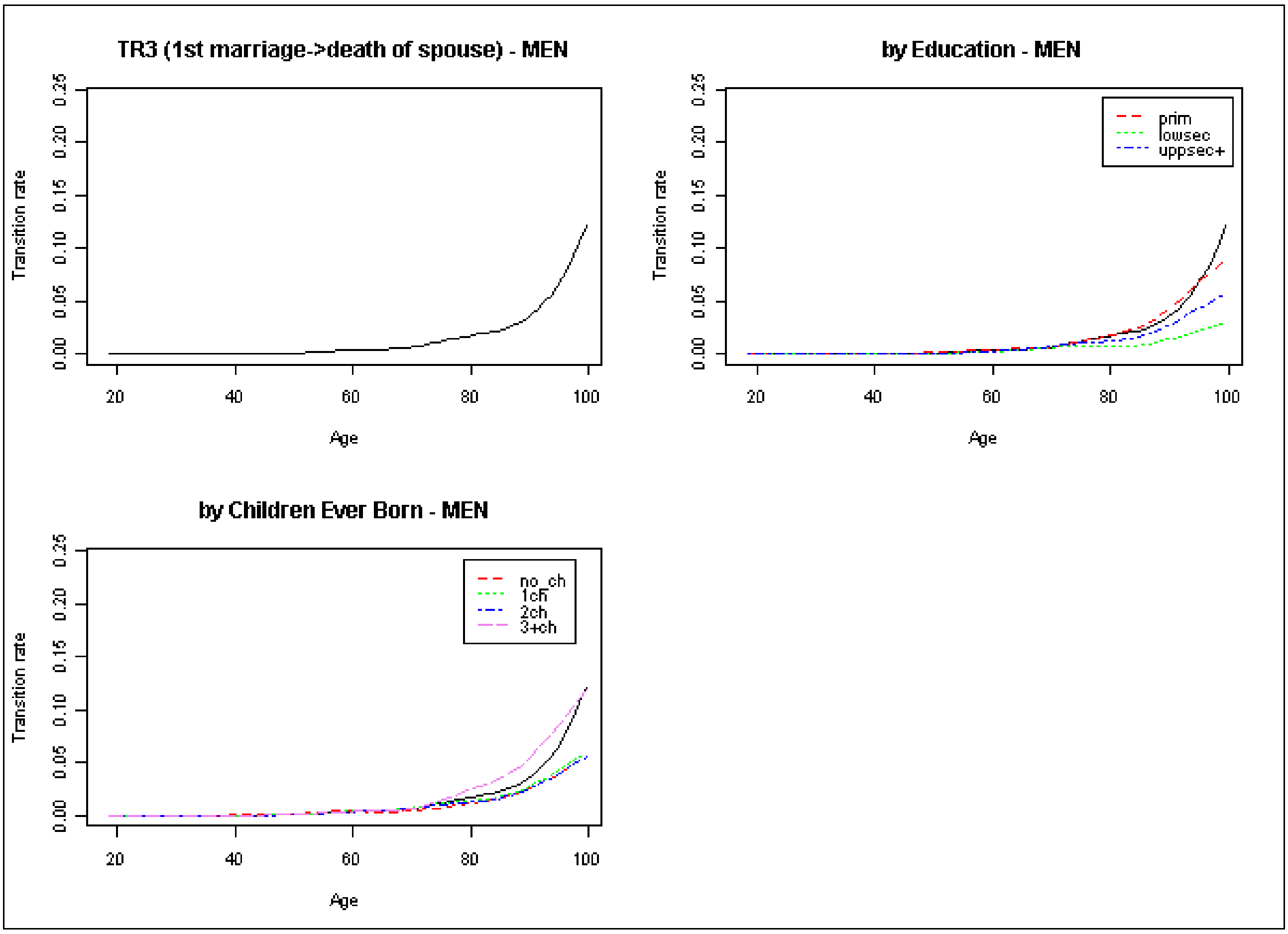
Number of events - WOMEN

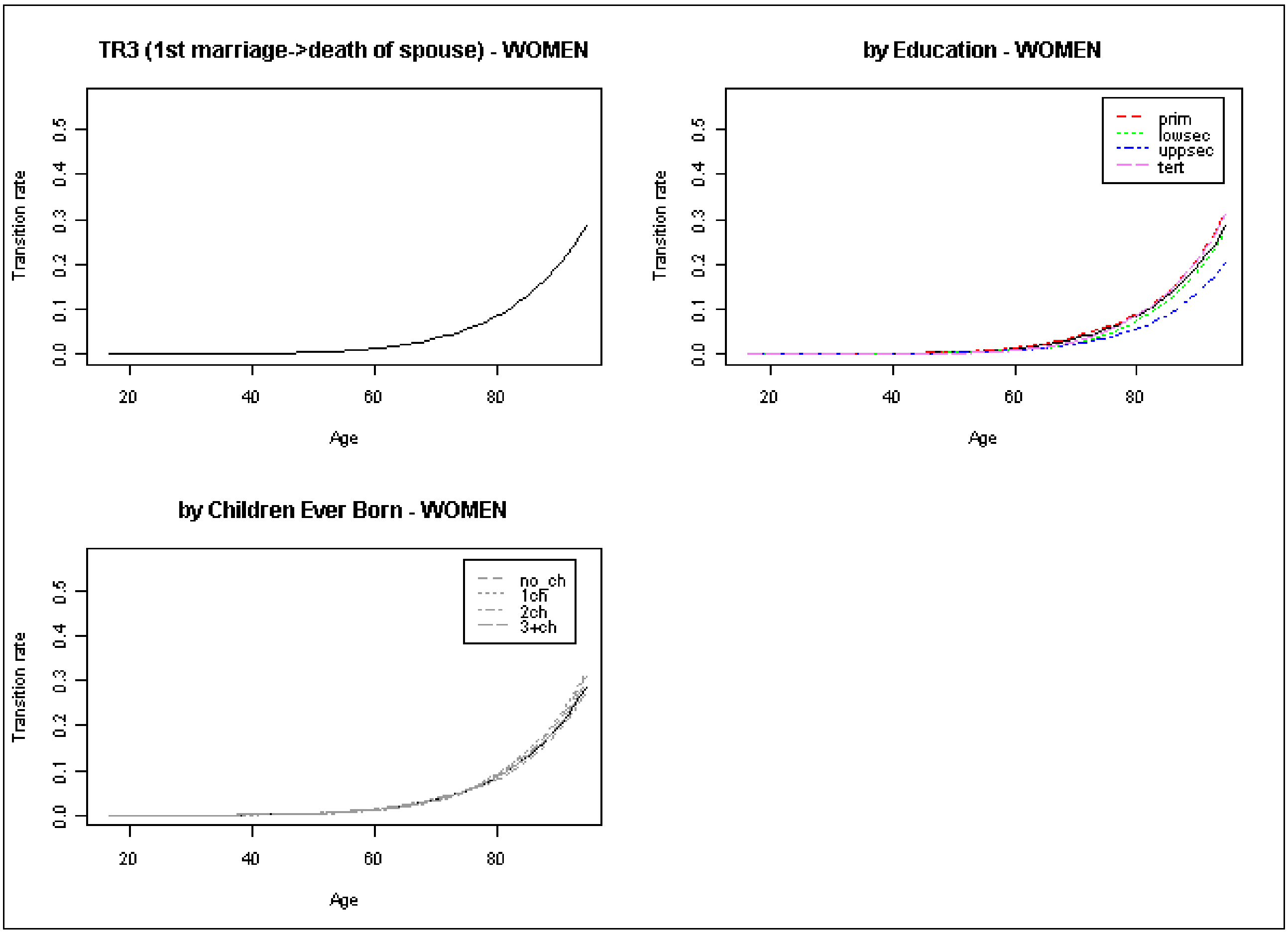
	int1	int2	int3	tot
prim	230	428	399	1057
lowsec	123	49	34	206
uppsec	56	27	20	103
tert	14	12	5	31
no_ch	25	41	47	113
1ch	75	105	113	293
2ch	193	179	133	505
3+ch	129	192	166	487
tot	422	516	459	1397

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	no_ch	1ch	2ch	3+ch
16	0	1.5483	1.2184	1.0598	0.7182	1.1134	0.8839	1.1086	1.2084
17	0	1.5372	1.2096	1.0522	0.713	1.1103	0.8814	1.1055	1.205
18	0	1.5261	1.2009	1.0446	0.7079	1.1072	0.879	1.1024	1.2017
19	0	1.5151	1.1922	1.0371	0.7028	1.1041	0.8765	1.0993	1.1983
20	0	1.5042	1.1836	1.0296	0.6977	1.1011	0.8741	1.0963	1.195
21	0	1.4933	1.1751	1.0222	0.6926	1.098	0.8717	1.0932	1.1917
22	0	1.4825	1.1666	1.0148	0.6876	1.095	0.8693	1.0902	1.1884
23	1e-04	1.4718	1.1581	1.0074	0.6827	1.092	0.8669	1.0872	1.1851
24	1e-04	1.4611	1.1497	1.0001	0.6777	1.0889	0.8645	1.0842	1.1818
25	1e-04	1.4504	1.1413	0.9928	0.6728	1.0859	0.8621	1.0812	1.1786
26	2e-04	1.4398	1.133	0.9856	0.6679	1.0829	0.8597	1.0782	1.1753
27	3e-04	1.4293	1.1247	0.9783	0.663	1.0799	0.8573	1.0752	1.1721
28	3e-04	1.4188	1.1164	0.9711	0.6581	1.0769	0.8549	1.0722	1.1688
29	4e-04	1.4083	1.1082	0.964	0.6532	1.0739	0.8526	1.0693	1.1656
30	6e-04	1.3978	1.0999	0.9568	0.6483	1.0709	0.8502	1.0663	1.1623
31	7e-04	1.3873	1.0917	0.9496	0.6435	1.0679	0.8478	1.0633	1.1591
32	8e-04	1.3768	1.0834	0.9424	0.6386	1.0649	0.8454	1.0603	1.1558
33	9e-04	1.3662	1.0751	0.9352	0.6337	1.0619	0.843	1.0573	1.1525
34	0.0011	1.3555	1.0667	0.9279	0.6288	1.059	0.8407	1.0543	1.1493
35	0.0012	1.3448	1.0582	0.9205	0.6238	1.056	0.8383	1.0514	1.1461
36	0.0013	1.334	1.0497	0.9131	0.6187	1.053	0.836	1.0485	1.1429
37	0.0015	1.323	1.0411	0.9056	0.6137	1.0501	0.8337	1.0456	1.1397
38	0.0016	1.3119	1.0324	0.898	0.6085	1.0473	0.8314	1.0427	1.1366
39	0.0018	1.3007	1.0235	0.8903	0.6033	1.0445	0.8292	1.0399	1.1336
40	0.0019	1.2894	1.0146	0.8826	0.5981	1.0417	0.827	1.0372	1.1306
41	0.0021	1.278	1.0057	0.8748	0.5928	1.0391	0.8249	1.0345	1.1277
42	0.0023	1.2666	0.9967	0.867	0.5875	1.0365	0.8228	1.032	1.1249
43	0.0025	1.2551	0.9877	0.8591	0.5822	1.034	0.8209	1.0295	1.1222
44	0.0028	1.2437	0.9787	0.8513	0.5769	1.0316	0.819	1.0271	1.1196
45	0.0031	1.2324	0.9698	0.8436	0.5717	1.0293	0.8172	1.0248	1.1171
46	0.0034	1.2213	0.961	0.836	0.5665	1.0271	0.8154	1.0227	1.1148
47	0.0037	1.2103	0.9524	0.8284	0.5614	1.0251	0.8138	1.0206	1.1125
48	0.0041	1.1996	0.944	0.8211	0.5564	1.0231	0.8122	1.0186	1.1103
49	0.0045	1.1902	0.9162	0.8057	0.5745	1.0097	0.8233	1.0168	1.1057
50	0.005	1.1805	0.9029	0.7966	0.5761	1.0047	0.8254	1.015	1.1031
51	0.0055	1.1712	0.8887	0.7872	0.5793	0.9989	0.8285	1.0133	1.1003
52	0.0061	1.1624	0.8735	0.7776	0.5844	0.9924	0.8326	1.0118	1.0975
53	0.0067	1.1543	0.8573	0.7677	0.5915	0.9851	0.8379	1.0103	1.0946
54	0.0074	1.1468	0.84	0.7576	0.6006	0.9769	0.8442	1.009	1.0916
55	0.0083	1.1401	0.8218	0.7473	0.6115	0.968	0.8517	1.0078	1.0885
56	0.0092	1.1342	0.8031	0.7371	0.6242	0.9584	0.8601	1.0067	1.0855
57	0.0102	1.1291	0.7844	0.7271	0.638	0.9486	0.8691	1.0058	1.0825
58	0.0113	1.1249	0.7661	0.7177	0.6525	0.9388	0.8785	1.0051	1.0796
59	0.0125	1.1217	0.7489	0.709	0.6671	0.9293	0.8879	1.0046	1.0771
60	0.0139	1.1195	0.7333	0.7014	0.6814	0.9206	0.8969	1.0044	1.0749
61	0.0154	1.1184	0.7197	0.6951	0.6948	0.9129	0.9054	1.0044	1.0731
62	0.0171	1.1185	0.7084	0.6902	0.7073	0.9063	0.9131	1.0047	1.0719
63	0.0189	1.1197	0.6995	0.6867	0.7188	0.901	0.9201	1.0053	1.0712

64	0.0209	1.1223	0.6929	0.6847	0.7294	0.8969	0.9263	1.0062	1.0711
65	0.0231	1.1261	0.6886	0.6841	0.7393	0.894	0.9318	1.0075	1.0715
66	0.0255	1.1312	0.6863	0.6848	0.7486	0.8921	0.9368	1.009	1.0724
67	0.0281	1.1383	0.6715	0.6807	0.7743	0.8823	0.9511	1.0109	1.0719
68	0.0309	1.1261	0.6877	0.6772	0.7921	0.8959	0.962	1.0025	1.0639
69	0.034	1.1256	0.6981	0.6786	0.8036	0.9033	0.9683	1.0001	1.0619
70	0.0373	1.1227	0.7111	0.6793	0.818	0.9128	0.9762	0.9962	1.0584
71	0.0409	1.1167	0.7269	0.6789	0.8354	0.9246	0.986	0.9905	1.0532
72	0.0447	1.1076	0.7452	0.6773	0.8556	0.9386	0.9974	0.9832	1.0464
73	0.0489	1.0959	0.7657	0.6747	0.878	0.9543	1.0102	0.9745	1.0383
74	0.0535	1.0829	0.787	0.6717	0.9015	0.9707	1.0235	0.9652	1.0298
75	0.0584	1.0705	0.808	0.6689	0.9245	0.9866	1.0364	0.9564	1.0216
76	0.0637	1.0601	0.8275	0.6668	0.9459	1.0011	1.0482	0.9489	1.0147
77	0.0695	1.0526	0.8447	0.6659	0.9648	1.0135	1.0585	0.9432	1.0095
78	0.0758	1.0482	0.8594	0.6661	0.9811	1.0237	1.0671	0.9393	1.006
79	0.0825	1.0466	0.8718	0.6673	0.9949	1.032	1.0742	0.937	1.0041
80	0.0899	1.0324	0.8912	0.6633	1.016	1.0469	1.0863	0.9285	0.9962
81	0.0979	1.0392	0.897	0.6677	1.0227	1.0496	1.0891	0.9309	0.9988
82	0.1065	1.0456	0.9026	0.6718	1.029	1.0523	1.0919	0.9333	1.0013
83	0.1159	1.0516	0.9078	0.6757	1.0349	1.0548	1.0945	0.9356	1.0038
84	0.126	1.0573	0.9127	0.6794	1.0406	1.0574	1.0971	0.9378	1.0062
85	0.1369	1.0629	0.9175	0.6829	1.0461	1.0598	1.0997	0.94	1.0085
86	0.1487	1.0684	0.9223	0.6864	1.0515	1.0623	1.1023	0.9422	1.0108
87	0.1615	1.0738	0.927	0.69	1.0568	1.0647	1.1048	0.9443	1.0132
88	0.1752	1.0793	0.9317	0.6935	1.0623	1.0672	1.1074	0.9465	1.0155
89	0.1901	1.0849	0.9366	0.6971	1.0678	1.0697	1.1099	0.9487	1.0179
90	0.2062	1.0907	0.9415	0.7008	1.0734	1.0722	1.1125	0.9509	1.0202
91	0.2236	1.0965	0.9465	0.7045	1.0791	1.0747	1.1151	0.9532	1.0226
92	0.2424	1.1024	0.9516	0.7083	1.085	1.0772	1.1178	0.9554	1.0251
93	0.2627	1.1084	0.9568	0.7122	1.0909	1.0798	1.1204	0.9577	1.0275
94	0.2848	1.1145	0.9621	0.7161	1.0969	1.0824	1.1231	0.96	1.0299


TR3 (1st marriage->death of spouse) - MEN
Transition rate
Age
by Education - MEN
prim
lowsec
uppsec+
Transition rate
Age
by Children Ever Born - MEN
no_ch
1ch
2ch
3+ch
Transition rate
Age


TR3 (1st marriage->death of spouse) - WOMEN
Transition rate
Age
by Education - WOMEN
prim
lowsec
uppsec
tert
Transition rate
Age
by Children Ever Born - WOMEN
no_ch
1ch
2ch
3+ch
Transition rate
Age

TR4 (divorce->second marriage) - Italy

Parameters
wl= 20 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 20 lft= TRUE rgt= TRUE

Knots - MEN
35 44

Covariates - MEN

	code	ncat	pvalue
EDU	1	2	0.01
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	1	5	11	17
lowsec	16	15	18	49
uppsec	11	12	5	28
tert	7	15	4	26
no_ch	16	4	4	24
1ch	14	17	9	40
2ch	5	15	13	33
3+ch	0	11	13	24
tot	34	47	38	119

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec+
23	0.0027	0.8245	1.4308
24	0.0275	0.8174	1.4185
25	0.0999	0.8105	1.4065
26	0.1299	0.8039	1.395
27	0.1362	0.7977	1.3843
28	0.1377	0.792	1.3744
29	0.137	0.7836	1.3719
30	0.1337	0.7777	1.3674
31	0.128	0.7718	1.3651
32	0.12	0.7658	1.3652
33	0.1104	0.7596	1.367
34	0.0999	0.7534	1.37
35	0.0892	0.7471	1.3729
36	0.0788	0.741	1.3746
37	0.0693	0.735	1.3742
38	0.0608	0.729	1.3712
39	0.0534	0.7228	1.3655
40	0.0472	0.7141	1.3608
41	0.0421	0.7701	1.2891
42	0.0379	0.7822	1.2568
43	0.0346	0.7985	1.2185
44	0.032	0.8197	1.1744
45	0.0299	0.8463	1.1248
46	0.0283	0.8783	1.0705
47	0.0271	0.9151	1.0131
48	0.0262	0.9552	0.9546
49	0.0255	0.9968	0.8973
50	0.0249	1.038	0.8434
51	0.0244	1.077	0.7949
52	0.0238	1.1123	0.753
53	0.0231	1.1434	0.718
54	0.0224	1.17	0.6897

55	0.0215	1.1922	0.6676
56	0.0204	1.2105	0.6506
57	0.0193	1.267	0.5981
58	0.0182	1.2679	0.5986
59	0.017	1.2686	0.5989
60	0.016	1.2686	0.5989
61	0.015	1.2679	0.5985
62	0.0142	1.2661	0.5977
63	0.0136	1.2632	0.5963
64	0.0131	1.259	0.5944
65	0.0129	1.2534	0.5917
66	0.0129	1.2464	0.5884
67	0.013	1.238	0.5844
68	0.0132	1.2279	0.5797
69	0.0135	1.2163	0.5742
70	0.0138	1.2032	0.568
71	0.0138	1.1886	0.5611
72	0.0136	1.1726	0.5536
73	0.0129	1.1555	0.5455
74	0.0119	1.1374	0.537
75	0.0105	1.1188	0.5282
76	0.009	1.0998	0.5192
77	0.0074	1.0808	0.5102
78	0.006	1.0621	0.5014
79	0.0047	1.0438	0.4928
80	0.0037	1.0261	0.4844
81	0.0029	1.009	0.4763
82	0.0022	0.9925	0.4685
83	0.0017	0.9766	0.461
84	0.0013	0.961	0.4537
85	0.001	0.9459	0.4465

Knots - WOMEN
34 43

Covariates - WOMEN

	code	ncat	pvalue
EDU	1	2	0.469
MAR	0	1	NA
CHI	2	3	0.127
LIV	0	1	NA

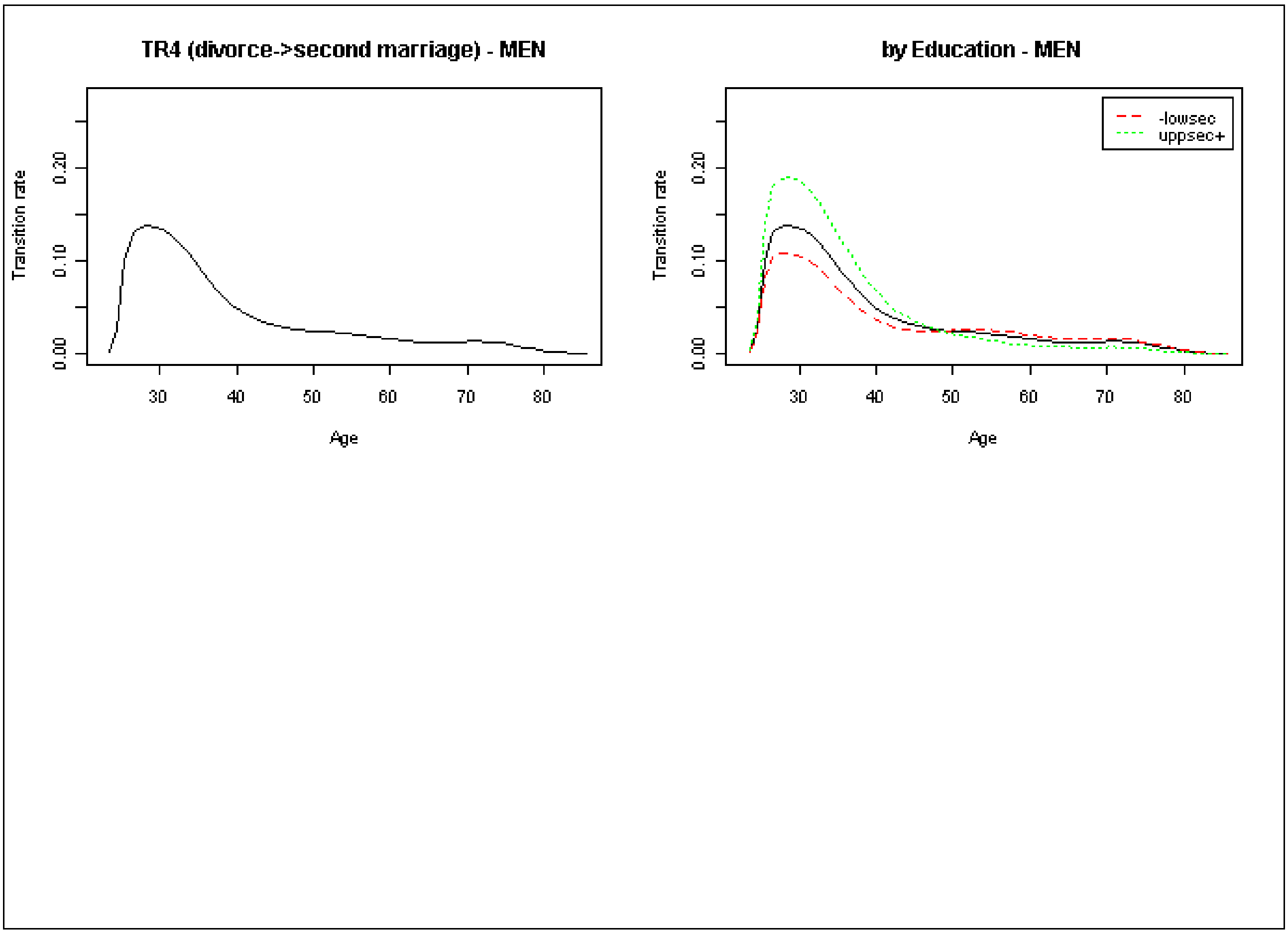
Number of events - WOMEN

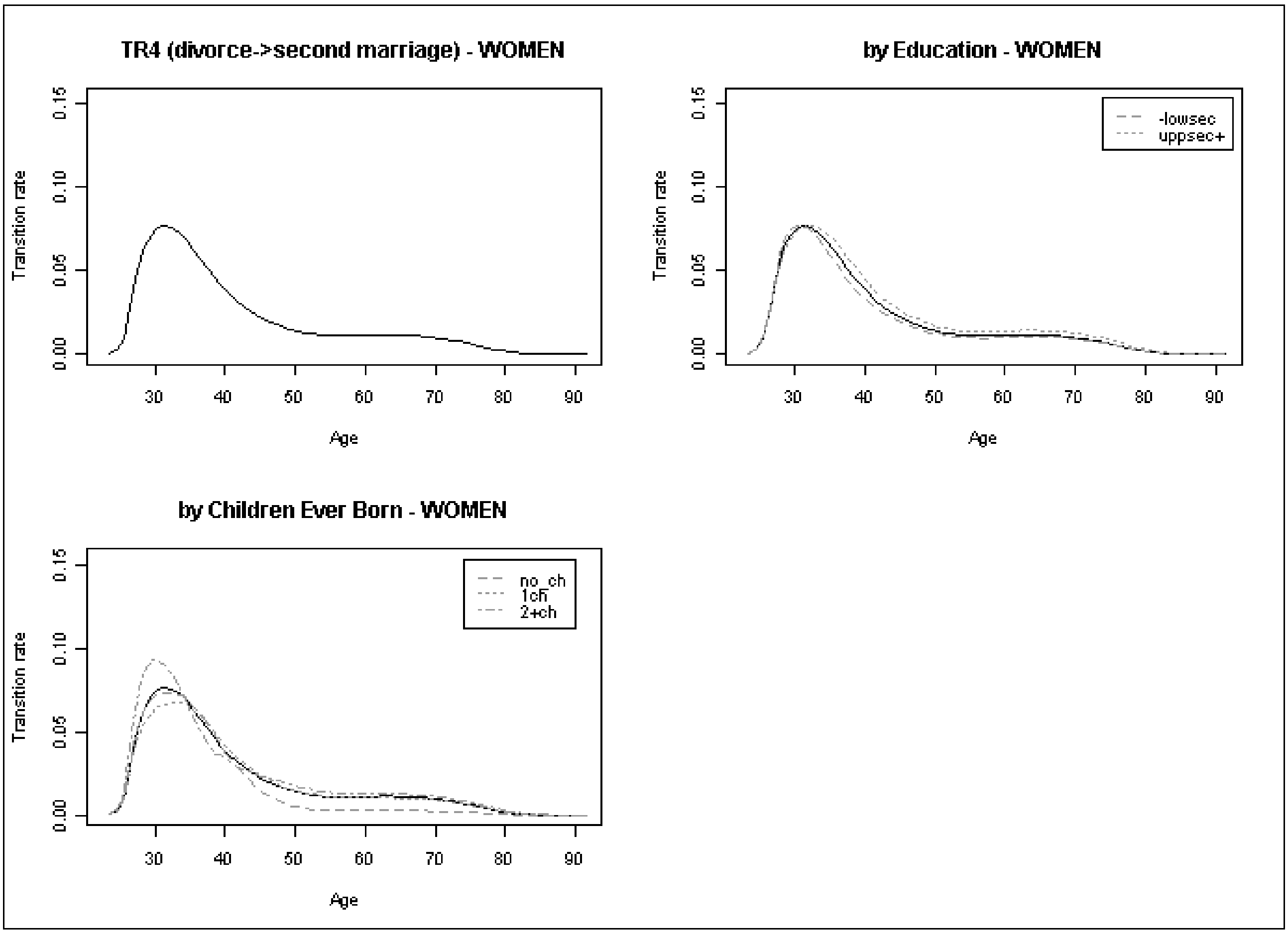
	int1	int2	int3	tot
prim	5	4	9	18
lowsec	14	20	15	49
uppsec	17	27	12	56
tert	3	10	5	18
no_ch	14	22	2	38
1ch	12	24	15	51
2ch	9	12	18	39
3+ch	4	4	6	14
tot	39	62	41	142

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec+	no_ch	1ch	2+ch
23	5e-04	1.0303	0.9516	1.2205	1.0703	1.6424
24	0.0024	1.0333	0.9543	1.165	1.0216	1.5677
25	0.0097	1.0361	0.9569	1.1131	0.9761	1.498
26	0.0282	1.0385	0.9591	1.0662	0.935	1.4348
27	0.0505	1.0402	0.9607	1.0253	0.8991	1.3797
28	0.0645	1.0409	0.9614	0.9913	0.8694	1.3341

29	0.0718	1.0407	0.9612	0.9648	0.8461	1.2983
30	0.0757	1.0205	0.9812	0.962	0.8567	1.2264
31	0.0766	1.0048	0.9943	0.961	0.8649	1.1776
32	0.0755	0.9819	1.0142	0.9714	0.8876	1.1209
33	0.0726	0.9527	1.0405	0.9916	0.9231	1.0553
34	0.0683	0.9212	1.0695	1.017	0.9652	0.987
35	0.0631	0.8927	1.096	1.0416	1.0048	0.9258
36	0.0574	0.8712	1.1165	1.0602	1.035	0.8786
37	0.0517	0.8572	1.1306	1.0705	1.0531	0.8452
38	0.0463	0.8391	1.152	1.0814	1.0749	0.7962
39	0.0413	0.841	1.1533	1.0086	1.0938	0.8728
40	0.0368	0.8437	1.1563	0.969	1.0899	0.8943
41	0.0329	0.8473	1.1604	0.9179	1.0848	0.9218
42	0.0294	0.8515	1.1652	0.8558	1.0792	0.9562
43	0.0264	0.8562	1.1704	0.7849	1.0743	0.9975
44	0.0238	0.861	1.1755	0.7086	1.0703	1.0438
45	0.0215	0.8656	1.1803	0.6315	1.067	1.0916
46	0.0195	0.8699	1.1846	0.5586	1.0637	1.1366
47	0.0177	0.8735	1.1881	0.4936	1.0596	1.175
48	0.0162	0.8766	1.1911	0.439	1.0543	1.2047
49	0.0149	0.879	1.1934	0.3952	1.0477	1.2251
50	0.0138	0.881	1.1952	0.3612	1.0399	1.2371
51	0.013	0.8827	1.1969	0.3356	1.0312	1.2423
52	0.0123	0.8846	1.198	0.2835	1.037	1.2861
53	0.0117	0.8861	1.2001	0.2794	1.0222	1.2677
54	0.0114	0.888	1.2026	0.2756	1.0082	1.2503
55	0.0111	0.8902	1.2056	0.2718	0.9945	1.2333
56	0.011	0.8929	1.2093	0.2682	0.981	1.2166
57	0.011	0.8961	1.2136	0.2645	0.9677	1.2001
58	0.0111	0.8996	1.2184	0.2609	0.9546	1.1839
59	0.0112	0.9035	1.2236	0.2575	0.9422	1.1685
60	0.0113	0.9075	1.2289	0.2544	0.9308	1.1543
61	0.0115	0.9115	1.2344	0.2517	0.9208	1.1419
62	0.0116	0.9153	1.2396	0.2494	0.9125	1.1317
63	0.0116	0.9191	1.2447	0.2478	0.9064	1.1241
64	0.0115	0.9226	1.2494	0.2467	0.9026	1.1193
65	0.0114	0.9258	1.2538	0.2463	0.9011	1.1174
66	0.0113	0.9289	1.258	0.2465	0.9019	1.1184
67	0.011	0.9319	1.262	0.2473	0.9049	1.1221
68	0.0107	0.9349	1.2661	0.2487	0.9099	1.1284
69	0.0103	0.9379	1.2702	0.2506	0.9167	1.1368
70	0.0098	0.941	1.2744	0.2529	0.9252	1.1473
71	0.0092	0.9443	1.2789	0.2556	0.9352	1.1597
72	0.0085	0.9478	1.2835	0.2588	0.9467	1.174
73	0.0078	0.9513	1.2883	0.2623	0.9598	1.1903
74	0.0069	0.9549	1.2932	0.2664	0.9746	1.2086
75	0.006	0.9584	1.2979	0.271	0.9913	1.2293
76	0.0051	0.9617	1.3024	0.2761	1.0101	1.2526
77	0.0041	0.9648	1.3066	0.2819	1.0312	1.2788
78	0.0032	0.9676	1.3104	0.2883	1.0548	1.3081
79	0.0025	0.9701	1.3138	0.2955	1.0811	1.3407
80	0.0018	0.9722	1.3167	0.3034	1.11	1.3765
81	0.0013	0.9741	1.3192	0.312	1.1414	1.4155
82	9e-04	0.9758	1.3215	0.3212	1.1752	1.4574
83	6e-04	0.9773	1.3236	0.331	1.2111	1.5019
84	4e-04	0.9789	1.3257	0.3414	1.2488	1.5487
85	3e-04	0.9805	1.3278	0.3521	1.2882	1.5975
86	2e-04	0.9822	1.3301	0.3632	1.3289	1.648
87	1e-04	0.984	1.3326	0.3747	1.3707	1.6999
88	1e-04	0.986	1.3353	0.3864	1.4138	1.7532
89	1e-04	0.9881	1.3382	0.3985	1.4579	1.808
90	0	0.9903	1.3411	0.4109	1.5033	1.8643


TR4 (divorce->second marriage) - MEN
Transition rate
0.00
0.10
0.20
Age
30
40
50
60
70
80
by Education - MEN
-lowsec
uppsec+
Transition rate
0.00
0.10
0.20
Age
30
40
50
60
70
80


TR4 (divorce->second marriage) - WOMEN
Transition rate
0.00
0.05
0.10
0.15
Age
30
40
50
60
70
80
90
by Education - WOMEN
-lowsec
uppsec+
Transition rate
Age
by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
Age

TR5 (death of spouse->2nd marriage) - Italy

Parameters
wl= 20 minage= 15 maxage= 80 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
46 57

Covariates - MEN

	code	ncat	pvalue
EDU	0	1	NA
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	2	7	5	14
lowsec	4	4	1	9
uppsec	6	1	0	7
tert	0	2	4	6
no_ch	3	0	0	3
1ch	4	5	1	10
2ch	0	7	3	10
3+ch	4	2	7	13
tot	12	14	11	37

Baseline and relative risks - MEN

age	baselin
20	0.002
21	0.005
22	0.0118
23	0.0259
25	0.0448
26	0.0676
27	0.0813
29	0.0769
30	0.0738
31	0.0688
32	0.0637
33	0.0582
34	0.0533
35	0.0487
36	0.0446
37	0.0408
38	0.0373
39	0.0341
40	0.0312
41	0.0286
42	0.0261
43	0.0239
44	0.0219
45	0.02
46	0.0183
47	0.0167
48	0.0153
49	0.014
50	0.0128
51	0.0117
52	0.0107
53	0.0098

54	0.009
55	0.0082
56	0.0075
57	0.0069
58	0.0063
59	0.0057
60	0.0053
61	0.0048
62	0.0044
63	0.004
64	0.0037
65	0.0034
66	0.0031
67	0.0028
68	0.0026
69	0.0024
70	0.0022
71	0.002
72	0.0018
73	0.0016
74	0.0015
75	0.0014
76	0.0012
77	8e-04
78	3e-04
79	1e-04
80	0

Knots - WOMEN
42 53

Covariates - WOMEN

	code	ncat	pvalue
EDU	0	1	NA
MAR	0	1	NA
CHI	2	3	0
LIV	0	1	NA

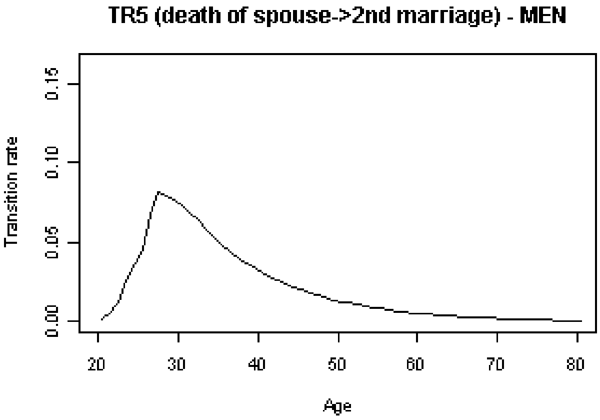
Number of events - WOMEN

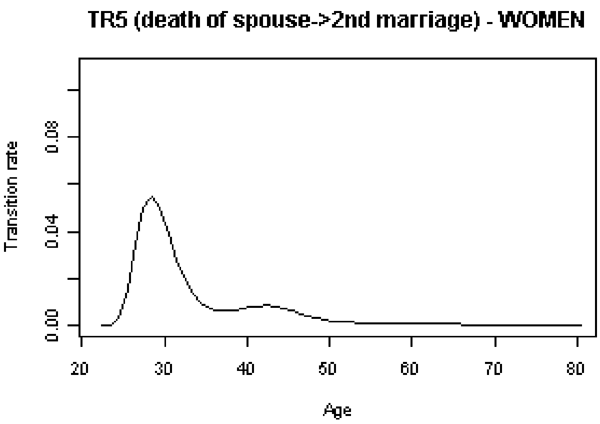
	int1	int2	int3	tot
prim	6	7	5	18
lowsec	3	2	7	12
uppsec	5	6	2	13
tert	0	2	0	2
no_ch	1	0	3	4
1ch	6	5	8	19
2ch	2	8	2	12
3+ch	4	4	1	9
tot	14	17	14	45

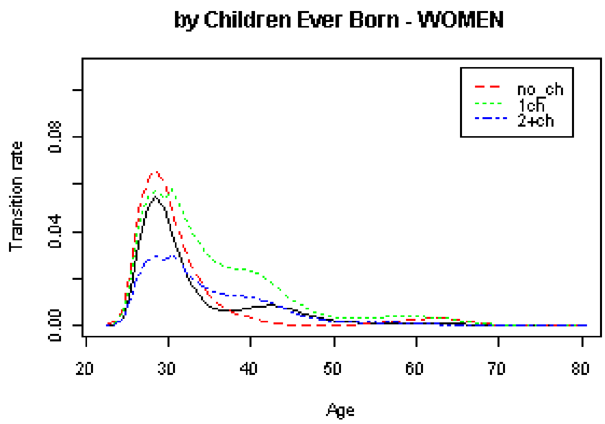
Baseline and relative risks - WOMEN

age	baselin	no_ch	1ch	2+ch
22	1e-04	3.3688	2.9505	1.5202
23	6e-04	2.6023	2.2792	1.1743
24	0.0036	2.0368	1.7839	0.9191
25	0.015	1.643	1.439	0.7414
26	0.0344	1.3901	1.2175	0.6273
27	0.0497	1.2502	1.095	0.5642
28	0.0545	1.2023	1.053	0.5425
29	0.0497	1.2329	1.0798	0.5564
30	0.0392	1.2229	1.4843	0.7693
31	0.0282	1.3278	1.7751	0.9213

32	0.0194	1.4444	2.1727	1.1294
33	0.0134	1.5331	2.6546	1.3821
34	0.0098	1.55	3.1612	1.6485
35	0.0077	1.465	3.5969	1.8787
36	0.0067	1.2801	3.8586	2.0181
37	0.0064	1.0318	3.8812	2.0324
38	0.0066	0.7722	3.6702	1.9239
39	0.0072	0.5444	3.2959	1.7291
40	0.0079	0.3688	2.8544	1.4984
41	0.0086	0.2457	2.4282	1.2754
42	0.0089	0.1647	2.0673	1.0862
43	0.0086	0.1134	1.7909	0.9413
44	0.0078	0.0817	1.5994	0.8408
45	0.0066	0.0623	1.4853	0.781
46	0.0054	0.0246	1.5155	0.7972
47	0.0042	0.0883	1.4358	0.734
48	0.0033	0.1112	1.4775	0.7485
49	0.0026	0.1466	1.5751	0.7888
50	0.0021	0.1999	1.7276	0.8523
51	0.0017	0.2794	1.9351	0.9365
52	0.0015	0.3957	2.1969	1.0374
53	0.0013	0.5618	2.5082	1.1482
54	0.0012	0.7909	2.8569	1.2582
55	0.0011	1.0919	3.2206	1.3525
56	0.0011	1.4628	3.5653	1.4139
57	0.0011	1.8835	3.8489	1.4263
58	0.001	2.3133	4.029	1.3808
59	0.001	2.697	4.0753	1.2793
60	0.001	2.9816	3.9809	1.1356
61	0.001	3.1355	3.7663	0.9711
62	0.001	3.1602	3.4742	0.8077
63	0.001	3.0881	3.156	0.6623
64	0.001	2.9686	2.8595	0.544
65	9e-04	3.0493	2.3756	0.2604
66	7e-04	2.9283	2.2814	0.2501
67	5e-04	2.9039	2.2624	0.248
68	4e-04	2.9994	2.3368	0.2561
69	2e-04	3.239	2.5234	0.2766
70	1e-04	3.6516	2.8449	0.3118
71	1e-04	4.2717	3.3279	0.3648
72	0	5.135	4.0005	0.4385
73	0	6.2704	4.8851	0.5355
74	0	7.69	5.991	0.6567
75	0	9.3825	7.3096	0.8013
76	0	11.3182	8.8176	0.9666
77	0	13.4674	10.492	1.1501
78	0	15.8271	12.3304	1.3516
79	0	18.4413	14.367	1.5749
80	0	21.4032	16.6745	1.8278


TR5 (death of spouse->2nd marriage) - MEN
Transition rate
0.00
0.05
0.10
0.15
20
30
40
50
60
70
80
Age


TR5 (death of spouse->2nd marriage) - WOMEN
Transition rate
0.00
0.04
0.08
20
30
40
50
60
70
80
Age


by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
0.00
0.04
0.08
20
30
40
50
60
70
80
Age

TR6 (parental home->1st union) - Italy

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
28 32

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	1	2	0
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	26	20	24	70
lowsec	173	201	139	513
uppsec	78	202	115	395
tert	11	47	57	115
noch	283	457	264	1004
1+ch	5	14	71	90
tot	288	470	335	1093

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert	noch	1+ch
15	0	3.2206	1.4451	0.4941	0.3288	1.0426	2.4359
16	0	3.2918	1.477	0.505	0.3361	1.0353	2.4188
17	2e-04	3.3622	1.5086	0.5158	0.3433	1.0296	2.4054
18	7e-04	3.4285	1.5384	0.526	0.3501	1.0268	2.3988
19	0.0019	3.487	1.5646	0.535	0.356	1.0272	2.3998
20	0.0039	3.5347	1.586	0.5423	0.3609	1.0295	2.4054
21	0.0066	3.5696	1.6017	0.5477	0.3645	1.0312	2.4091
22	0.0103	3.591	1.6113	0.5509	0.3667	1.0283	2.4024
23	0.0156	3.5993	1.615	0.5522	0.3675	1.0175	2.3773
24	0.0229	3.5961	1.6136	0.5517	0.3672	0.997	2.3293
25	0.0329	3.3233	1.5435	0.6189	0.4036	0.9948	2.2076
26	0.0458	2.9796	1.4544	0.7017	0.4483	0.9911	2.0622
27	0.0609	2.4607	1.3208	0.8288	0.5172	1.0003	1.8852
28	0.0767	1.9474	1.1879	0.953	0.5843	1.0091	1.7225
29	0.0909	1.6139	1.0993	1.0289	0.6251	1.0067	1.6113
30	0.101	1.3505	1.0283	1.0867	0.6561	1.0086	1.5333
31	0.1055	1.27	1.0031	1.0785	0.7558	0.9872	1.5416
32	0.1041	1.2194	0.9868	1.0726	0.8167	0.9821	1.5595
33	0.0984	1.1524	0.9683	1.0694	0.9086	0.9817	1.5972
34	0.0902	1.0691	0.9477	1.0695	1.0329	0.9814	1.6485
35	0.0814	0.9754	0.9267	1.0729	1.1807	0.9776	1.7041
36	0.0732	0.8835	0.908	1.0793	1.3331	0.9691	1.753
37	0.0661	0.8056	0.8944	1.088	1.4706	0.9563	1.7861
38	0.0603	0.7479	0.8866	1.0982	1.5815	0.9405	1.7998
39	0.0557	0.7096	0.8838	1.1086	1.664	0.9231	1.7963
40	0.052	0.6425	0.8732	1.1181	1.7872	0.8977	1.7943
41	0.049	0.6473	0.8797	1.1264	1.8005	0.8842	1.7674
42	0.0464	0.6511	0.8849	1.133	1.8111	0.8713	1.7415
43	0.0442	0.6541	0.8889	1.1382	1.8194	0.8594	1.7178
44	0.0418	0.6567	0.8925	1.1428	1.8266	0.8485	1.6959
45	0.0399	0.6595	0.8963	1.1476	1.8344	0.8377	1.6743
46	0.0381	0.6631	0.9012	1.1539	1.8444	0.8261	1.6513
47	0.0363	0.668	0.9079	1.1625	1.8581	0.8133	1.6257
48	0.0343	0.6746	0.9169	1.174	1.8765	0.7993	1.5976

49	0.0317	0.6831	0.9283	1.1887	1.9	0.7846	1.5683
50	0.0283	0.6933	0.9422	1.2065	1.9285	0.7703	1.5397
51	0.0238	0.7051	0.9583	1.227	1.9613	0.7572	1.5136
52	0.0186	0.7181	0.9759	1.2496	1.9974	0.7461	1.4914
53	0.0134	0.732	0.9948	1.2738	2.036	0.7371	1.4734
54	0.0089	0.7464	1.0144	1.2989	2.0762	0.7299	1.459
55	0.0056	0.7611	1.0344	1.3245	2.1171	0.7238	1.4468
56	0.0034	0.776	1.0546	1.3504	2.1585	0.7181	1.4354
57	0.002	0.7909	1.0749	1.3764	2.2	0.7122	1.4235
58	0.0012	0.806	1.0954	1.4026	2.2419	0.7057	1.4105
59	7e-04	0.8211	1.116	1.429	2.2841	0.6987	1.3965
60	4e-04	0.8365	1.1369	1.4558	2.327	0.6915	1.3821

Knots - WOMEN
25 29

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	1	2	0.261
LIV	0	1	NA

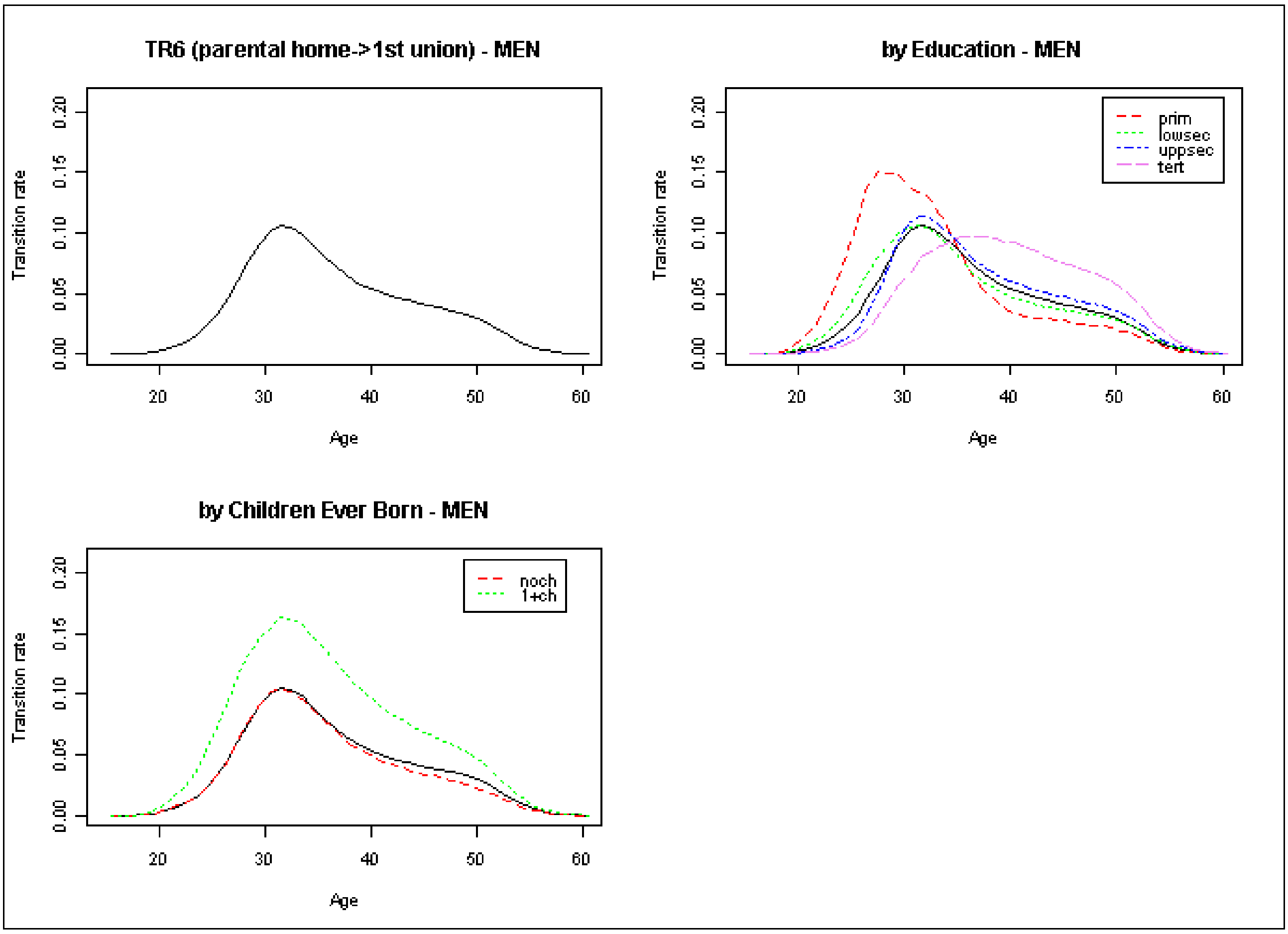
Number of events - WOMEN

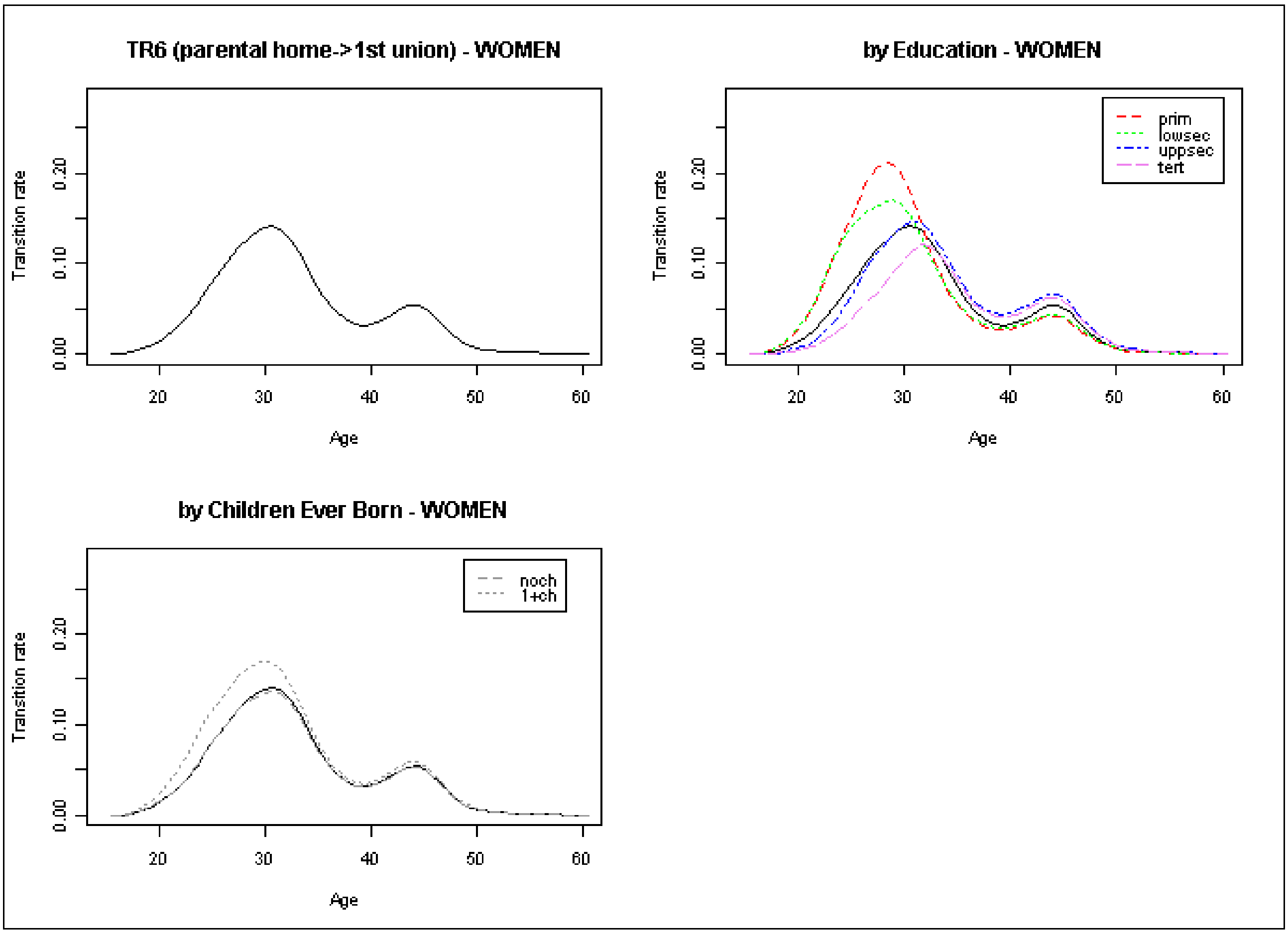
	int1	int2	int3	tot
prim	12	14	17	43
lowsec	180	177	109	466
uppsec	124	251	168	543
tert	14	80	90	184
noch	319	510	336	1165
1+ch	11	12	49	72
tot	330	523	385	1238

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	noch	1+ch
15	0	1.5852	1.6945	0.4493	0.2772	0.9433	1.5757
16	3e-04	1.6794	1.7953	0.476	0.2937	0.9659	1.6134
17	0.0022	1.775	1.8974	0.5031	0.3104	0.9868	1.6483
18	0.0061	1.8664	1.9951	0.529	0.3264	1.0033	1.6759
19	0.0109	1.9491	2.0835	0.5524	0.3408	1.0127	1.6915
20	0.0173	2.0211	2.1605	0.5728	0.3534	1.0133	1.6925
21	0.0264	2.0838	2.2275	0.5906	0.3644	1.0051	1.6788
22	0.0388	2.084	2.1734	0.643	0.3958	1.0043	1.6308
23	0.0539	2.0633	2.08	0.7058	0.4335	1.0016	1.5697
24	0.0705	1.9947	1.8935	0.7953	0.487	1.0052	1.4916
25	0.0872	1.9126	1.6892	0.8843	0.54	1.0074	1.4153
26	0.1027	1.8521	1.5481	0.9407	0.5737	1.0006	1.3567
27	0.1165	1.7822	1.4174	0.9749	0.5939	0.9919	1.3075
28	0.1282	1.6477	1.3335	1.0003	0.6588	0.9813	1.2705
29	0.137	1.4944	1.2334	1.0096	0.7109	0.9728	1.2369
30	0.1411	1.2857	1.099	1.0309	0.7915	0.971	1.2002
31	0.1379	1.0677	0.9599	1.0585	0.8815	0.9733	1.1638
32	0.1261	0.8981	0.852	1.081	0.9527	0.9752	1.1335
33	0.1072	0.7995	0.7905	1.0999	1.0005	0.9748	1.1127
34	0.0851	0.722	0.7492	1.1442	1.0708	0.9774	1.0958
35	0.0648	0.7429	0.7709	1.1773	1.1017	0.9747	1.0927
36	0.0492	0.7766	0.8058	1.2306	1.1517	0.9747	1.0927
37	0.039	0.815	0.8457	1.2916	1.2087	0.9765	1.0948
38	0.0335	0.8476	0.8795	1.3432	1.257	0.9789	1.0975
39	0.0322	0.8642	0.8967	1.3695	1.2816	0.9806	1.0994
40	0.0346	0.8595	0.8919	1.3621	1.2747	0.9807	1.0995
41	0.0401	0.8363	0.8678	1.3253	1.2402	0.9787	1.0973

42	0.0475	0.8037	0.834	1.2737	1.192	0.975	1.0932
43	0.0537	0.7739	0.8031	1.2265	1.1478	0.9706	1.0882
44	0.0546	0.7575	0.786	1.2005	1.1234	0.9665	1.0836
45	0.0478	0.7615	0.7901	1.2067	1.1293	0.9637	1.0805
46	0.0358	0.7881	0.8177	1.2489	1.1687	0.9629	1.0796
47	0.0234	0.8346	0.866	1.3227	1.2378	0.9639	1.0807
48	0.0142	0.8924	0.9259	1.4142	1.3234	0.9659	1.083
49	0.0086	0.9468	0.9825	1.5005	1.4042	0.9679	1.0852
50	0.0055	0.9813	1.0183	1.5551	1.4553	0.9687	1.0861
51	0.0039	0.9839	1.0209	1.5592	1.4592	0.9676	1.0848
52	0.0031	0.9539	0.9898	1.5116	1.4146	0.9644	1.0812
53	0.0026	0.9024	0.9363	1.43	1.3382	0.9599	1.0761
54	0.0024	0.8467	0.8786	1.3418	1.2557	0.9552	1.0709
55	0.002	0.8031	0.8334	1.2727	1.1911	0.9518	1.0672
56	0.0016	0.7827	0.8122	1.2404	1.1608	0.951	1.0662
57	0.0011	0.7907	0.8204	1.253	1.1726	0.9533	1.0688
58	7e-04	0.8273	0.8584	1.311	1.2269	0.9585	1.0746
59	4e-04	0.8883	0.9217	1.4076	1.3173	0.966	1.083
60	2e-04	0.9656	1.0019	1.5302	1.432	0.9745	1.0926


TR6 (parental home->1st union) - MEN
by Education - MEN
prim
lowsec
uppsec
tert
by Children Ever Born - MEN
noch
1+ch
Transition rate
0.00
0.05
0.10
0.15
0.20
20
30
40
50
60
Age


TR6 (parental home->1st union) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec
tert
by Children Ever Born - WOMEN
noch
1+ch
Transition rate
0.00
0.10
0.20
20
30
40
50
60
Age

TR7 (parental home->alone/others) - Italy

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
22 27

Covariates - MEN

	code	ncat	pvalue
EDU	1	2	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	3	2	13	18
lowsec	45	62	40	147
uppsec	109	95	83	287
tert	1	25	28	54
noch	158	183	164	505
1+ch	0	0	2	2
tot	158	184	165	507

Baseline and relative risks - MEN

age	baselin	-lowsec	uppsec+
15	0	0.889	1.4139
16	8e-04	0.8267	1.3149
17	0.0059	0.7753	1.233
18	0.0133	0.7398	1.1766
19	0.0206	0.7371	1.1308
20	0.0253	0.7526	1.1133
21	0.0263	0.7909	1.1057
22	0.0244	0.8417	1.1011
23	0.022	0.8876	1.0972
24	0.0206	0.9142	1.0898
25	0.0206	0.9243	1.0628
26	0.022	0.8795	1.0776
27	0.0243	0.8371	1.0668
28	0.0261	0.7903	1.0662
29	0.026	0.7468	1.0856
30	0.0234	0.7125	1.1289
31	0.0192	0.6907	1.1927
32	0.0148	0.6816	1.2682
33	0.0116	0.6821	1.3434
34	0.0096	0.6866	1.4065
35	0.0089	0.6745	1.4723
36	0.0092	0.6787	1.4815
37	0.0103	0.6765	1.4767
38	0.0116	0.6723	1.4674
39	0.0123	0.6713	1.4652
40	0.0116	0.6777	1.4794
41	0.0095	0.6933	1.5133
42	0.0069	0.7164	1.5637
43	0.0047	0.7422	1.62
44	0.0032	0.7637	1.667
45	0.0024	0.7742	1.6899
46	0.002	0.77	1.6808
47	0.002	0.7529	1.6435
48	0.0022	0.7292	1.5916

49	0.0024	0.7074	1.544
50	0.0026	0.6954	1.5179
51	0.0025	0.6987	1.5251
52	0.0021	0.7194	1.5702
53	0.0015	0.7559	1.65
54	0.001	0.803	1.7527
55	7e-04	0.8518	1.8593
56	5e-04	0.8923	1.9477
57	4e-04	0.9168	2.0011
58	4e-04	0.9231	2.015
59	3e-04	0.9155	1.9982
60	3e-04	0.9011	1.967

Knots - WOMEN
21 25

Covariates - WOMEN

	code	ncat	pvalue
EDU	2	3	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

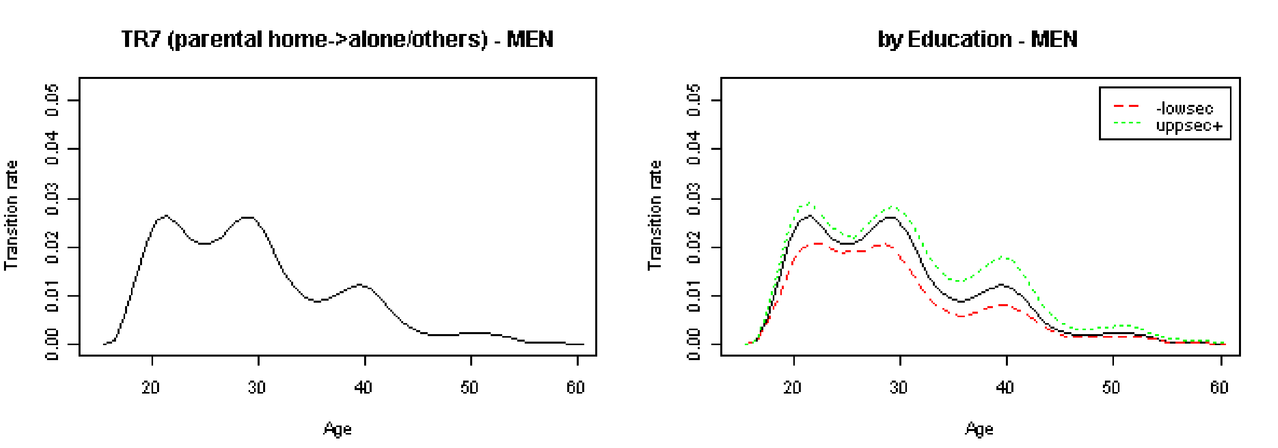
Number of events - WOMEN

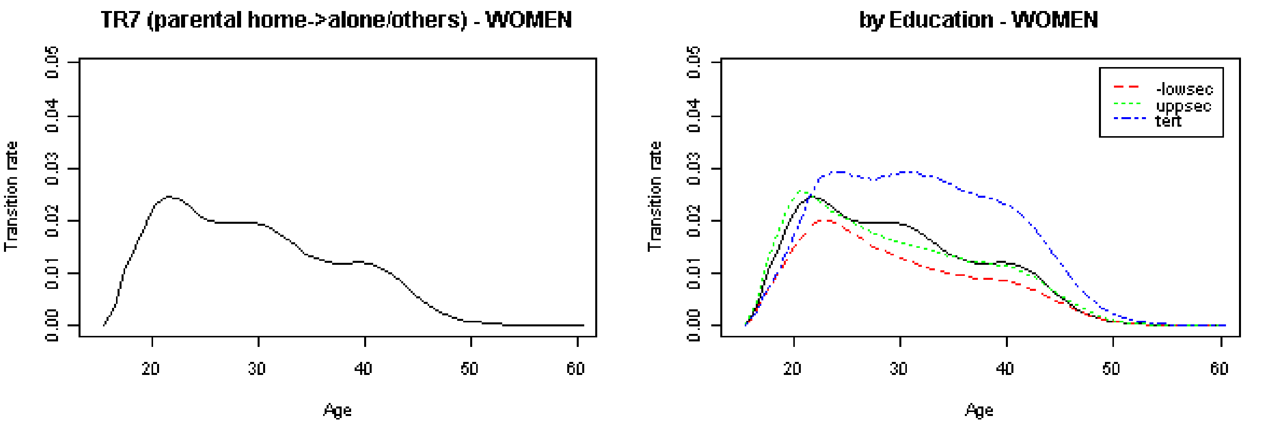
	int1	int2	int3	tot
prim	2	3	2	7
lowsec	24	27	27	78
uppsec	92	86	47	225
tert	4	24	53	81
noch	122	137	122	381
1+ch	0	3	6	9
tot	122	140	128	390

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec	tert
15	2e-04	0.7219	1.3169	0.7499
16	0.0036	0.6918	1.262	0.7186
17	0.0104	0.6694	1.2211	0.6954
18	0.0152	0.6608	1.2054	0.6864
19	0.0197	0.6757	1.1618	0.7415
20	0.0231	0.7131	1.1077	0.8487
21	0.0245	0.7706	1.0231	1.0142
22	0.0241	0.832	0.9752	1.1675
23	0.0227	0.8844	0.9536	1.2875
24	0.0212	0.8899	0.9767	1.3805
25	0.0201	0.8779	0.9744	1.4163
26	0.0196	0.8374	0.9453	1.4294
27	0.0195	0.7796	0.9005	1.4323
28	0.0197	0.7201	0.8553	1.4392
29	0.0197	0.6731	0.8231	1.4623
30	0.0193	0.6472	0.8123	1.5103
31	0.0183	0.6446	0.8261	1.5883
32	0.0169	0.6627	0.8618	1.695
33	0.0153	0.6817	0.9082	1.8512
34	0.0138	0.7221	0.962	1.9608
35	0.0128	0.7532	1.0035	2.0454
36	0.0121	0.767	1.0218	2.0827
37	0.0119	0.7611	1.0139	2.0667
38	0.012	0.7404	0.9864	2.0105
39	0.0121	0.7144	0.9518	1.9401
40	0.0119	0.6936	0.9241	1.8836
41	0.0112	0.6863	0.9143	1.8637

42	0.0099	0.6975	0.9293	1.8942
43	0.0082	0.7291	0.9714	1.98
44	0.0063	0.7795	1.0384	2.1167
45	0.0046	0.843	1.1232	2.2893
46	0.0032	0.9105	1.213	2.4726
47	0.0022	0.97	1.2923	2.6342
48	0.0015	1.0104	1.3461	2.7438
49	0.001	1.0249	1.3654	2.783
50	7e-04	1.0131	1.3496	2.751
51	5e-04	0.9803	1.306	2.6621
52	4e-04	0.9347	1.2452	2.5381
53	2e-04	0.8838	1.1774	2.4
54	2e-04	0.8332	1.11	2.2626
55	1e-04	0.7859	1.047	2.134
56	1e-04	0.7427	0.9894	2.0168
57	1e-04	0.7034	0.9371	1.9102
58	0	0.6674	0.8892	1.8124
59	0	0.6339	0.8445	1.7214
60	0	0.6024	0.8025	1.6358


TR7 (parental home->alone/others) - MEN
by Education - MEN
Transition rate
Age
-lowsec
uppsec+


TR7 (parental home->alone/others) - WOMEN
by Education - WOMEN
Transition rate
Age
-lowsec
uppsec
tert

TR8 (alone/with others->1st union) - Italy

Parameters
wl= 5 minage= 15 maxage= 60 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
30 34

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0.001
MAR	0	1	NA
CHI	1	2	0.098
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	6	5	13	24
lowsec	58	44	45	147
uppsec	61	63	42	166
tert	10	35	38	83
noch	130	143	114	387
1+ch	6	5	25	36
tot	136	148	139	422

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert	noch	1+ch
15	0	1.5132	0.9593	0.8214	0.327	0.9629	1.3088
16	1e-04	1.5427	0.978	0.8374	0.3334	0.9605	1.3055
17	3e-04	1.5731	0.9973	0.8539	0.3399	0.9592	1.3038
18	0.001	1.6046	1.0173	0.8711	0.3468	0.9604	1.3054
19	0.0028	1.6376	1.0382	0.889	0.3539	0.9646	1.3112
20	0.0061	1.672	1.06	0.9076	0.3613	0.9719	1.321
21	0.0107	1.7076	1.0826	0.927	0.369	0.981	1.3334
22	0.0159	1.7438	1.1056	0.9466	0.3768	0.99	1.3456
23	0.0219	1.7798	1.1284	0.9661	0.3846	0.9965	1.3544
24	0.0288	1.8144	1.1503	0.9849	0.3921	0.9983	1.357
25	0.037	1.8465	1.1707	1.0024	0.399	0.9944	1.3517
26	0.0459	1.7787	1.1453	1.0219	0.481	0.9972	1.3239
27	0.0554	1.7027	1.1155	1.0391	0.5649	0.9956	1.291
28	0.0649	1.5643	1.0565	1.0559	0.6929	0.999	1.2483
29	0.0736	1.3912	0.981	1.0711	0.8427	1.0066	1.2044
30	0.0807	1.2399	0.9143	1.0823	0.9701	1.0151	1.1705
31	0.0857	1.1412	0.8705	1.0885	1.0514	1.0235	1.1526
32	0.0881	1.0412	0.8253	1.0925	1.1299	1.0398	1.1437
33	0.0878	1.0222	0.8204	1.0801	1.1725	1.0301	1.1885
34	0.0851	1.0101	0.8164	1.0716	1.194	1.036	1.2272
35	0.0804	0.9939	0.8114	1.0604	1.2254	1.0399	1.2785
36	0.0744	0.974	0.8059	1.0472	1.268	1.0384	1.3403
37	0.0677	0.9517	0.8005	1.033	1.3204	1.0294	1.408
38	0.0608	0.9295	0.7959	1.0193	1.3779	1.0138	1.4746
39	0.0542	0.9099	0.7929	1.0081	1.4343	0.9945	1.5329
40	0.0481	0.8952	0.7917	1.0005	1.4844	0.9749	1.5777
41	0.0427	0.8857	0.7926	0.9968	1.526	0.9575	1.6082
42	0.038	0.881	0.795	0.9964	1.5592	0.9433	1.6267
43	0.0339	0.8689	0.7962	0.9918	1.6137	0.9174	1.6593
44	0.0303	0.8743	0.8011	0.9979	1.6237	0.9166	1.6579
45	0.0273	0.8795	0.8059	1.0039	1.6334	0.9172	1.6589
46	0.0247	0.8844	0.8104	1.0094	1.6424	0.9194	1.663
47	0.0224	0.889	0.8146	1.0146	1.6509	0.9233	1.67
48	0.0203	0.8933	0.8186	1.0196	1.659	0.9284	1.6792

49	0.0185	0.8978	0.8226	1.0247	1.6673	0.9342	1.6897
50	0.0169	0.9026	0.827	1.0302	1.6762	0.9401	1.7004
51	0.0151	0.908	0.832	1.0364	1.6862	0.9457	1.7105
52	0.0129	0.9142	0.8377	1.0434	1.6977	0.9508	1.7198
53	0.0103	0.9212	0.8441	1.0514	1.7108	0.9556	1.7284
54	0.0073	0.929	0.8512	1.0603	1.7252	0.9601	1.7366
55	0.0045	0.9373	0.8589	1.0698	1.7407	0.9648	1.745
56	0.0024	0.9461	0.8669	1.0798	1.757	0.9698	1.7542
57	0.0012	0.9551	0.8751	1.0901	1.7736	0.9755	1.7645
58	6e-04	0.9641	0.8835	1.1005	1.7905	0.9819	1.7759
59	3e-04	0.9733	0.8918	1.1109	1.8075	0.9887	1.7883
60	1e-04	0.9825	0.9003	1.1214	1.8246	0.9958	1.8012

Knots - WOMEN
28 33

Covariates - WOMEN

	code	ncat	pvalue
EDU	2	3	0.984
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

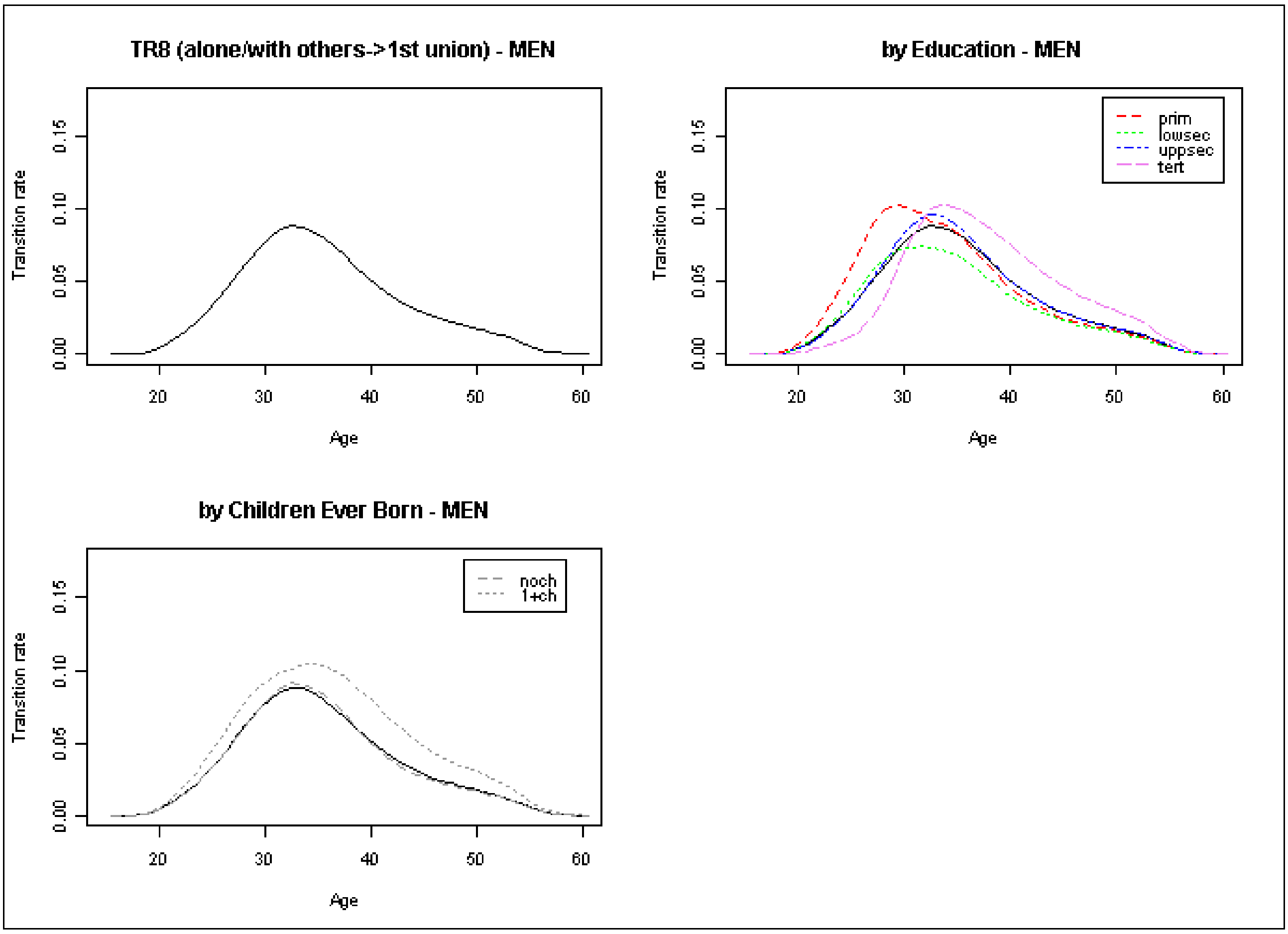
Number of events - WOMEN

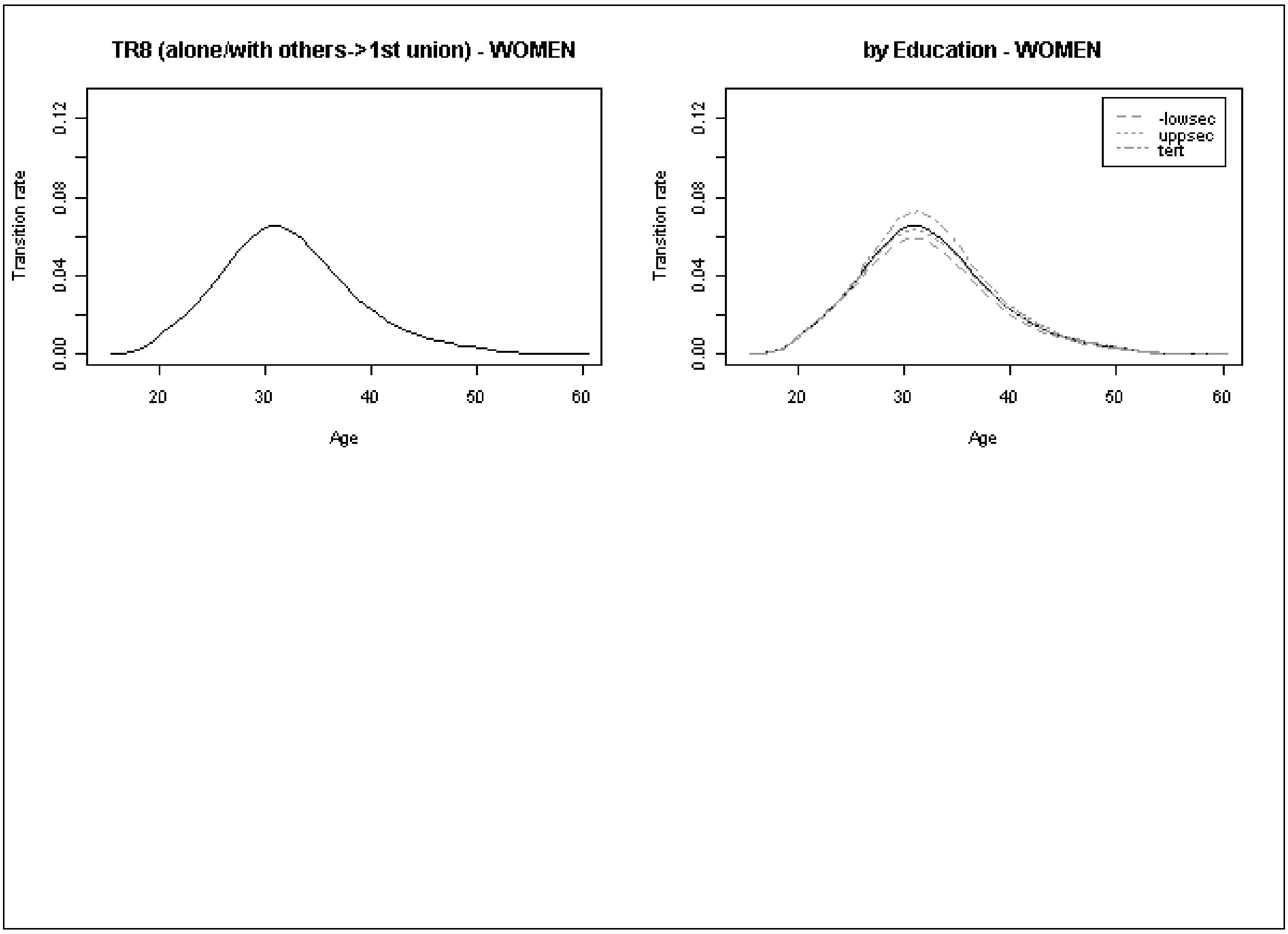
	int1	int2	int3	tot
prim	2	1	6	9
lowsec	10	19	10	39
uppsec	32	34	22	88
tert	15	33	19	67
noch	56	80	45	181
1+ch	2	7	12	21
tot	58	87	57	203

Baseline and relative risks - WOMEN

age	baselin	-lowsec	uppsec	tert
15	0	0.9553	1.0052	1.0203
16	2e-04	0.9554	1.0053	1.0203
17	9e-04	0.9554	1.0053	1.0203
18	0.0028	0.9554	1.0053	1.0203
19	0.0068	0.9553	1.0052	1.0203
20	0.0114	0.9552	1.0051	1.0201
21	0.0159	0.955	1.0049	1.0199
22	0.0205	0.9547	1.0046	1.0196
23	0.0258	0.9544	1.0042	1.0192
24	0.0317	0.954	1.0039	1.0189
25	0.0382	0.9477	0.9995	1.0301
26	0.0452	0.9414	0.9953	1.0416
27	0.052	0.9318	0.9889	1.0597
28	0.058	0.9207	0.9816	1.0813
29	0.0626	0.9114	0.9756	1.0999
30	0.0651	0.9058	0.972	1.1121
31	0.0651	0.9003	0.9686	1.1244
32	0.0629	0.9008	0.9723	1.1216
33	0.0587	0.9011	0.9754	1.1192
34	0.0532	0.9013	0.9797	1.1151
35	0.0471	0.9013	0.985	1.1095
36	0.0408	0.9011	0.99	1.1038
37	0.0349	0.901	0.994	1.0992
38	0.0295	0.9009	0.9966	1.0963
39	0.0248	0.901	1	1.093
40	0.0208	0.9015	1.0005	1.0936
41	0.0173	0.9024	1.0015	1.0947

42	0.0144	0.9038	1.003	1.0963
43	0.012	0.9055	1.0049	1.0984
44	0.01	0.9076	1.0073	1.101
45	0.0083	0.91	1.01	1.1039
46	0.0069	0.9127	1.0129	1.1072
47	0.0057	0.9156	1.0162	1.1107
48	0.0046	0.9187	1.0196	1.1145
49	0.0037	0.9221	1.0234	1.1186
50	0.0028	0.9257	1.0274	1.123
51	0.002	0.9297	1.0318	1.1278
52	0.0014	0.934	1.0366	1.133
53	9e-04	0.9386	1.0417	1.1386
54	5e-04	0.9435	1.0472	1.1446
55	3e-04	0.9487	1.0529	1.1508
56	2e-04	0.954	1.0588	1.1573
57	1e-04	0.9595	1.0649	1.1639
58	1e-04	0.965	1.071	1.1707
59	0	0.9706	1.0772	1.1774
60	0	0.9762	1.0834	1.1842


TR8 (alone/with others->1st union) - MEN
by Education - MEN
prim
lowsec
uppsec
tert
by Children Ever Born - MEN
noch
1+ch
Transition rate
Age
0.00
0.05
0.10
0.15
20
30
40
50
60


TR8 (alone/with others->1st union) - WOMEN
by Education - WOMEN
-lowsec
uppsec
tert
Transition rate
Age
0.00
0.04
0.08
0.12
20
30
40
50
60

TR9 (1st union->disruption)

Not enough data for transition 9

TR10 (Alone/others->2nd union)

Not enough data for transition 10

TR11 (childless->1st birth) - Italy

Parameters
wl= 5 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
31 34

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0
MAR	1	2	0
CHI	0	1	NA
LIV	2	3	0

Number of events - MEN

	int1	int2	int3	tot
prim	31	16	13	60
lowsec	255	199	141	595
uppsec	126	195	171	492
tert	11	64	109	184
no_marr	74	40	31	145
1st_mar	348	432	395	1175
2nd mar	0	1	2	3
div/wid	1	0	6	7
par_hom	25	13	4	42
no_part	24	13	19	56
partner	374	448	411	1233
tot	423	473	434	1331

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar	par_hom	no_part	partner
15	0	1.7935	0.959	0.429	0.1258	0.6996	34.4414	0.8218	4.3347	91.1881
16	0	1.9911	1.0646	0.4763	0.1396	0.7419	36.5226	0.7644	4.0321	84.8227
17	1e-04	2.2066	1.1798	0.5278	0.1547	0.7929	39.0336	0.7099	3.7445	78.773
18	2e-04	2.4321	1.3004	0.5817	0.1705	0.8546	42.0725	0.6538	3.4487	72.5499
19	7e-04	2.6496	1.4167	0.6338	0.1858	0.9162	45.1046	0.5891	3.1075	65.3724
20	0.0018	2.8329	1.5147	0.6776	0.1986	0.9493	46.7348	0.5099	2.6895	56.5797
21	0.0033	2.9542	1.5795	0.7066	0.2071	0.9174	45.1637	0.4164	2.1966	46.2106
22	0.0051	2.996	1.6019	0.7166	0.2101	0.8028	39.5223	0.3178	1.6762	35.2616
23	0.0073	2.9619	1.5837	0.7085	0.2077	0.6293	30.9827	0.2274	1.1993	25.2292
24	0.01	2.8772	1.5384	0.6882	0.2017	0.4487	22.0879	0.1555	0.8202	17.2538
25	0.0135	2.7799	1.4863	0.6649	0.1949	0.3025	14.891	0.1049	0.5534	11.6426
26	0.0181	2.7068	1.4473	0.6474	0.1898	0.2033	10.0083	0.0725	0.3823	8.0423
27	0.0243	2.4772	1.3712	0.675	0.2465	0.1494	6.8452	0.0578	0.2682	5.7716
28	0.0325	2.301	1.3256	0.7187	0.3099	0.1192	5.0839	0.0494	0.2024	4.4624
29	0.0429	2.0382	1.2658	0.7983	0.4173	0.1067	4.0679	0.0472	0.1606	3.6872
30	0.055	1.7084	1.1925	0.9015	0.5549	0.1041	3.4853	0.0483	0.1332	3.227
31	0.0671	1.4057	1.1266	0.9985	0.6833	0.1057	3.1647	0.05	0.1158	2.9541
32	0.077	1.1957	1.0793	1.063	0.7699	0.1072	2.9861	0.0507	0.1051	2.78
33	0.0828	0.9553	1.007	1.105	0.8409	0.108	2.8006	0.0514	0.0952	2.6182
34	0.0837	0.8949	0.9629	1.0974	0.9242	0.1044	2.6943	0.0465	0.1015	2.501
35	0.0805	0.8262	0.9091	1.0773	0.9938	0.1003	2.5759	0.042	0.1074	2.3941
36	0.0749	0.7387	0.845	1.0655	1.1129	0.0974	2.4822	0.0369	0.1197	2.3197
37	0.0683	0.6533	0.788	1.0717	1.2676	0.0968	2.4468	0.0321	0.1368	2.298
38	0.0616	0.5934	0.7545	1.0969	1.422	0.0989	2.4816	0.0287	0.1549	2.3342
39	0.0553	0.5664	0.7484	1.1369	1.5546	0.1029	2.5687	0.027	0.1707	2.4115
40	0.0492	0.5426	0.7481	1.1883	1.7066	0.107	2.6588	0.0252	0.1871	2.489
41	0.0433	0.5585	0.77	1.2232	1.7566	0.1087	2.6996	0.0256	0.1899	2.5268
42	0.0374	0.5649	0.7788	1.2372	1.7768	0.1064	2.6431	0.0252	0.1869	2.4868
43	0.0312	0.5586	0.7701	1.2234	1.7569	0.1004	2.4935	0.0241	0.1783	2.372

44	0.0252	0.5423	0.7477	1.1878	1.7058	0.0926	2.3015	0.0225	0.167	2.2214
45	0.0188	0.5235	0.7218	1.1466	1.6467	0.0859	2.1342	0.0212	0.157	2.0886
46	0.0116	0.5105	0.7039	1.1181	1.6058	0.0824	2.0464	0.0205	0.1518	2.0198
47	0.0051	0.5094	0.7024	1.1158	1.6024	0.0834	2.071	0.0207	0.1536	2.0435
48	0.0016	0.5228	0.7208	1.145	1.6444	0.0895	2.2225	0.022	0.1632	2.1714
49	4e-04	0.5491	0.7571	1.2026	1.7271	0.1005	2.4981	0.0243	0.1802	2.3979
50	1e-04	0.5837	0.8047	1.2783	1.8358	0.1157	2.8738	0.0274	0.2029	2.6997

Knots - WOMEN
28 32

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0
MAR	1	2	0
CHI	0	1	NA
LIV	2	3	0

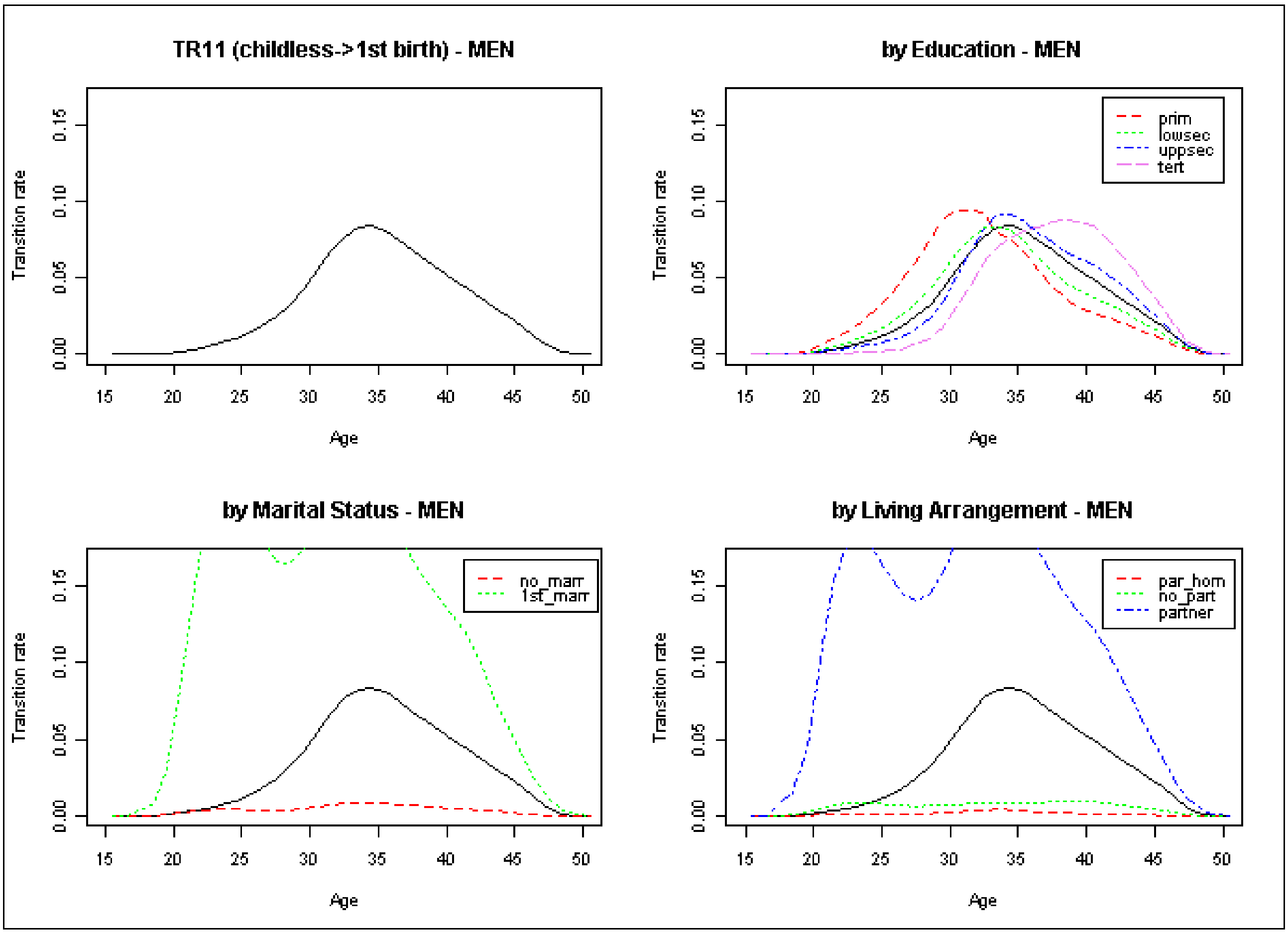
Number of events - WOMEN

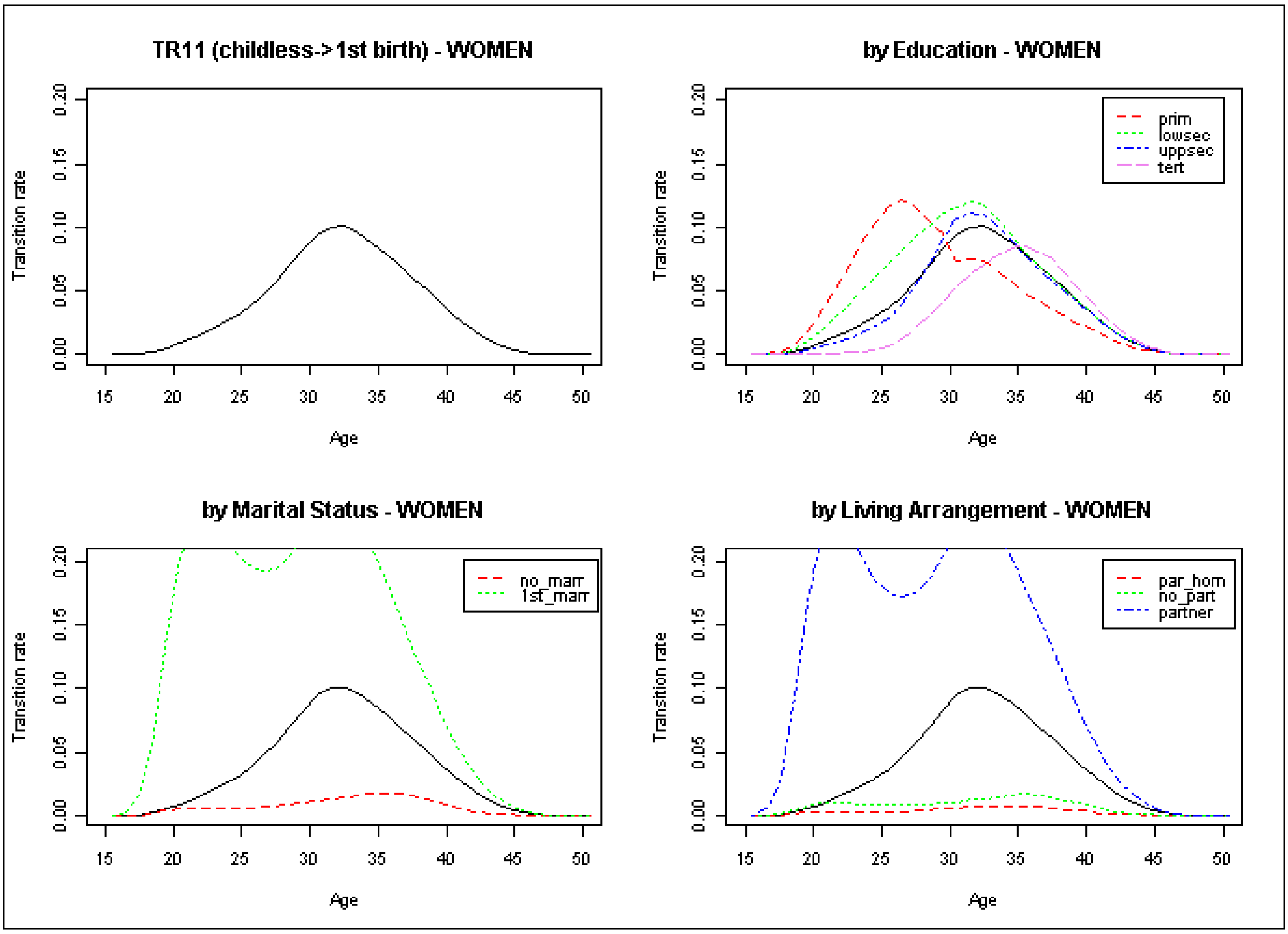
	int1	int2	int3	tot
prim	22	10	9	41
lowsec	232	199	123	554
uppsec	162	290	147	599
tert	6	82	102	190
no_marr	84	47	56	187
1st_mar	339	531	315	1185
2nd mar	0	0	5	5
div/wid	0	3	4	7
par_hom	34	18	13	65
no_part	13	13	22	48
partner	376	551	345	1272
tot	423	581	380	1385

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar	par_hom	no_part	partner
15	0	2.4121	1.3609	0.4417	0.049	0.8899	32.8606	0.7938	2.7987	61.4646
16	1e-04	2.6568	1.499	0.4865	0.054	0.8971	33.1247	0.7058	2.4885	54.6519
17	5e-04	2.9118	1.6428	0.5332	0.0592	0.884	32.6416	0.6154	2.1695	47.6467
18	0.0021	3.1572	1.7813	0.5782	0.0641	0.8308	30.6773	0.5152	1.8164	39.8926
19	0.0053	3.3706	1.9017	0.6173	0.0685	0.7315	27.0125	0.4087	1.4407	31.6411
20	0.0091	3.536	1.995	0.6475	0.0718	0.6012	22.1981	0.3069	1.0821	23.7652
21	0.0134	3.6492	2.0588	0.6683	0.0741	0.4662	17.2138	0.2213	0.7802	17.1341
22	0.0182	3.7193	2.0984	0.6811	0.0756	0.3488	12.8807	0.1568	0.5529	12.1416
23	0.0235	3.7639	2.1236	0.6893	0.0765	0.2588	9.5559	0.1122	0.3957	8.6894
24	0.0296	3.4601	2.0328	0.7353	0.1259	0.2023	7.0115	0.0892	0.2864	6.2565
25	0.037	3.1515	1.9421	0.7841	0.1771	0.1637	5.3242	0.0742	0.2178	4.7309
26	0.0461	2.6449	1.7893	0.8591	0.2585	0.1411	4.1586	0.0673	0.1729	3.7192
27	0.0574	2.0273	1.6019	0.9493	0.3571	0.1286	3.3753	0.065	0.1438	3.0567
28	0.0704	1.488	1.4398	1.0299	0.4442	0.1216	2.8927	0.0644	0.1265	2.6563
29	0.0835	1.1352	1.3358	1.0852	0.5025	0.1182	2.6387	0.0646	0.1176	2.4509
30	0.0944	0.7736	1.224	1.1353	0.5587	0.1196	2.5059	0.067	0.1134	2.3434
31	0.1004	0.7526	1.1964	1.1145	0.631	0.1299	2.4519	0.0685	0.1227	2.3048
32	0.1007	0.729	1.165	1.0901	0.7022	0.1447	2.462	0.0718	0.136	2.3208
33	0.096	0.6926	1.1164	1.0525	0.8135	0.1684	2.4444	0.0766	0.1571	2.3165
34	0.0884	0.6516	1.0623	1.0111	0.9466	0.198	2.3872	0.0822	0.1839	2.2852
35	0.0795	0.6192	1.0202	0.9797	1.0644	0.2256	2.3207	0.0876	0.2099	2.2526
36	0.0704	0.6013	0.9981	0.9644	1.1465	0.244	2.2635	0.0915	0.2284	2.2296
37	0.0611	0.584	0.9772	0.9503	1.2308	0.2555	2.1353	0.0927	0.2408	2.1364
38	0.0515	0.5892	0.9859	0.9587	1.2418	0.2492	2.0824	0.091	0.2364	2.0971
39	0.0413	0.5926	0.9916	0.9643	1.249	0.238	1.9885	0.087	0.226	2.0051
40	0.0317	0.5939	0.9937	0.9664	1.2517	0.2255	1.8841	0.0821	0.2132	1.8914
41	0.0229	0.5935	0.9931	0.9657	1.2508	0.2149	1.7958	0.0775	0.2014	1.7868

42	0.0154	0.5924	0.9912	0.9639	1.2485	0.208	1.7384	0.0743	0.1929	1.7117
43	0.0094	0.5914	0.9895	0.9623	1.2463	0.205	1.7131	0.0725	0.1884	1.6715
44	0.0051	0.5906	0.9882	0.961	1.2448	0.2044	1.7083	0.072	0.1869	1.6579
45	0.0023	0.5896	0.9865	0.9593	1.2425	0.2038	1.7035	0.0717	0.1862	1.6518
46	9e-04	0.5871	0.9824	0.9553	1.2374	0.2006	1.6763	0.0707	0.1837	1.6298
47	3e-04	0.5823	0.9742	0.9474	1.2271	0.1928	1.6115	0.0683	0.1775	1.5745
48	1e-04	0.5746	0.9615	0.935	1.2111	0.1806	1.5092	0.0643	0.1671	1.4825
49	0	0.5648	0.945	0.919	1.1903	0.1656	1.3841	0.0593	0.154	1.3665
50	0	0.554	0.9269	0.9014	1.1675	0.1503	1.2558	0.0541	0.1404	1.2457


TR11 (childless->1st birth) - MEN
by Education - MEN
prim
lowsec
uppsec
tert
by Marital Status - MEN
no_marr
1st_marr
by Living Arrangement - MEN
par_hom
no_part
partner
Transition rate
Age


TR11 (childless->1st birth) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec
tert
by Marital Status - WOMEN
no_marr
1st_marr
by Living Arrangement - WOMEN
par_hom
no_part
partner
Transition rate
Age

TR12 (1st birth->2nd birth) - Italy

Parameters
wl= 5 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
34 37

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0.003
MAR	1	2	0
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	22	13	10	45
lowsec	207	192	132	531
uppsec	98	136	98	332
tert	10	45	74	129
no_marr	9	6	7	22
1st_mar	326	376	303	1005
2nd mar	0	2	1	3
div/wid	0	2	3	5
par_hom	0	1	3	4
no_part	5	3	4	12
partner	331	382	307	1020
tot	336	386	314	1036

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar
16	1e-04	0.6868	0.8345	0.8773	0.701	0.6902	1.999
17	4e-04	0.7092	0.8618	0.9059	0.7239	0.6364	1.843
18	0.0012	0.7312	0.8884	0.934	0.7463	0.5884	1.7041
19	0.0033	0.7515	0.9132	0.96	0.7671	0.5469	1.5838
20	0.0084	0.7701	0.9357	0.9837	0.786	0.5111	1.48
21	0.0185	0.7874	0.9568	1.0059	0.8037	0.4793	1.3882
22	0.0348	0.8045	0.9775	1.0276	0.8211	0.4504	1.3043
23	0.0551	0.8212	0.9978	1.049	0.8382	0.4239	1.2277
24	0.0761	0.8361	1.016	1.068	0.8534	0.401	1.1613
25	0.0949	0.8466	1.0286	1.0814	0.864	0.3833	1.11
26	0.109	0.8499	1.0327	1.0856	0.8675	0.3721	1.0777
27	0.1167	0.8455	1.0273	1.0799	0.8629	0.3676	1.0646
28	0.1191	0.8354	1.0151	1.0671	0.8527	0.3682	1.0664
29	0.1174	0.8245	1.0018	1.0531	0.8415	0.371	1.0743
30	0.1159	0.8067	0.9747	1.0406	0.8745	0.3717	1.0803
31	0.1171	0.7943	0.9527	1.0377	0.9265	0.3685	1.0756
32	0.1222	0.7831	0.9281	1.0439	1.0176	0.361	1.0608
33	0.1306	0.7781	0.9104	1.059	1.1206	0.3519	1.0413
34	0.1398	0.7826	0.9076	1.0801	1.202	0.3454	1.0264
35	0.1462	0.7867	0.9057	1.0981	1.2703	0.3441	1.0263
36	0.1464	0.7941	0.9118	1.0956	1.3191	0.3567	1.0271
37	0.1392	0.7939	0.9091	1.0823	1.3562	0.3757	1.0443
38	0.126	0.787	0.8975	1.0527	1.4029	0.4026	1.0592
39	0.1096	0.7779	0.8826	1.0166	1.4549	0.4318	1.0649
40	0.0924	0.7708	0.8709	0.9872	1.5	0.4554	1.0628
41	0.0756	0.7681	0.8654	0.9707	1.5322	0.4688	1.0562
42	0.0599	0.7682	0.863	0.9579	1.5695	0.4773	1.0382
43	0.0457	0.7716	0.8669	0.9622	1.5766	0.4758	1.035
44	0.033	0.7749	0.8705	0.9662	1.5832	0.4751	1.0335

45	0.0223	0.7774	0.8733	0.9693	1.5883	0.4764	1.0364
46	0.0131	0.7799	0.8762	0.9724	1.5934	0.4792	1.0425
47	0.0056	0.7838	0.8805	0.9773	1.6014	0.4819	1.0482
48	0.0015	0.7901	0.8877	0.9853	1.6144	0.4828	1.0502
49	3e-04	0.799	0.8977	0.9963	1.6325	0.4816	1.0475
50	1e-04	0.8094	0.9093	1.0093	1.6538	0.479	1.042

Knots - WOMEN
30 34

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0.022
MAR	1	2	0
CHI	0	1	NA
LIV	0	1	NA

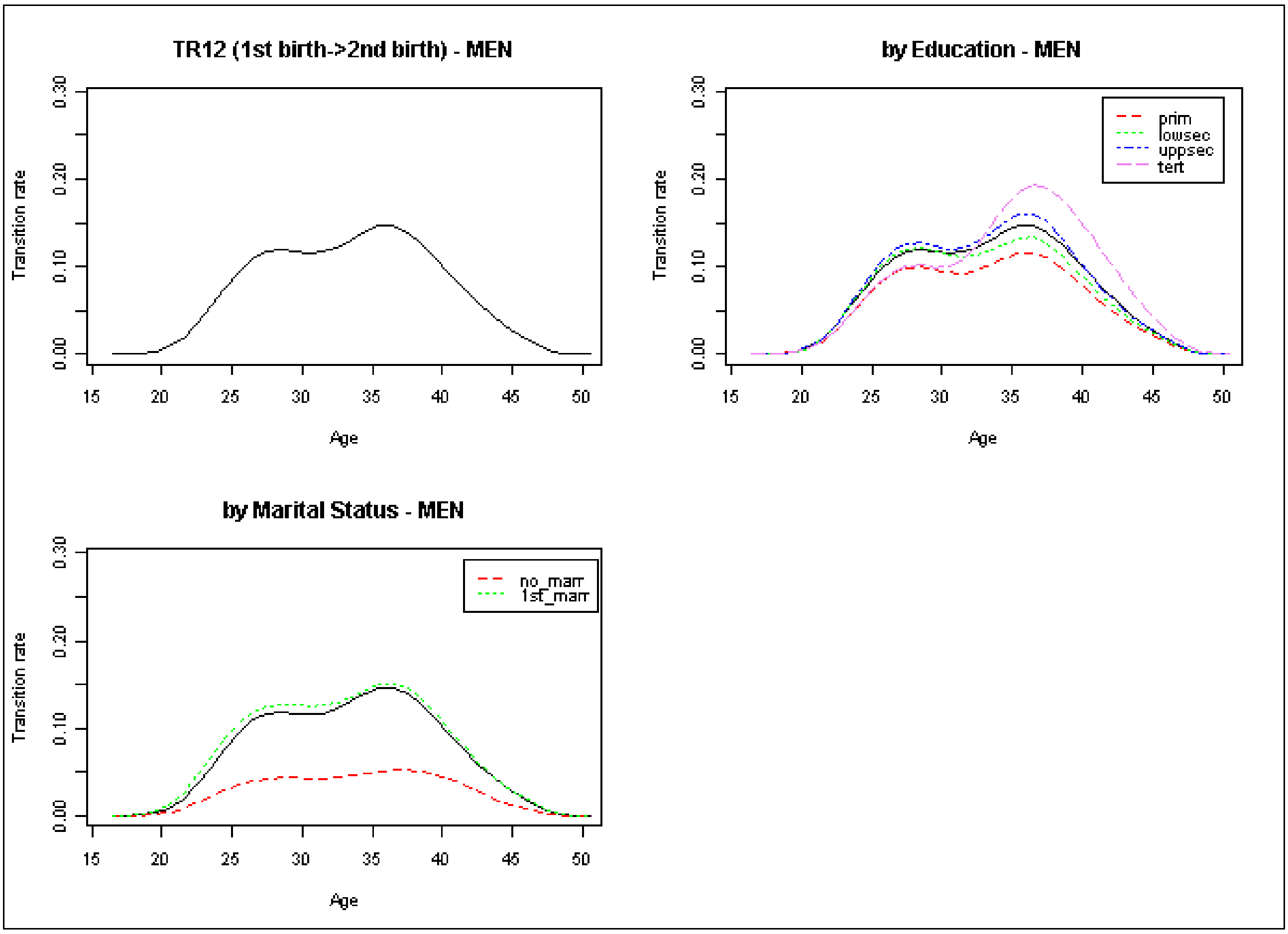
Number of events - WOMEN

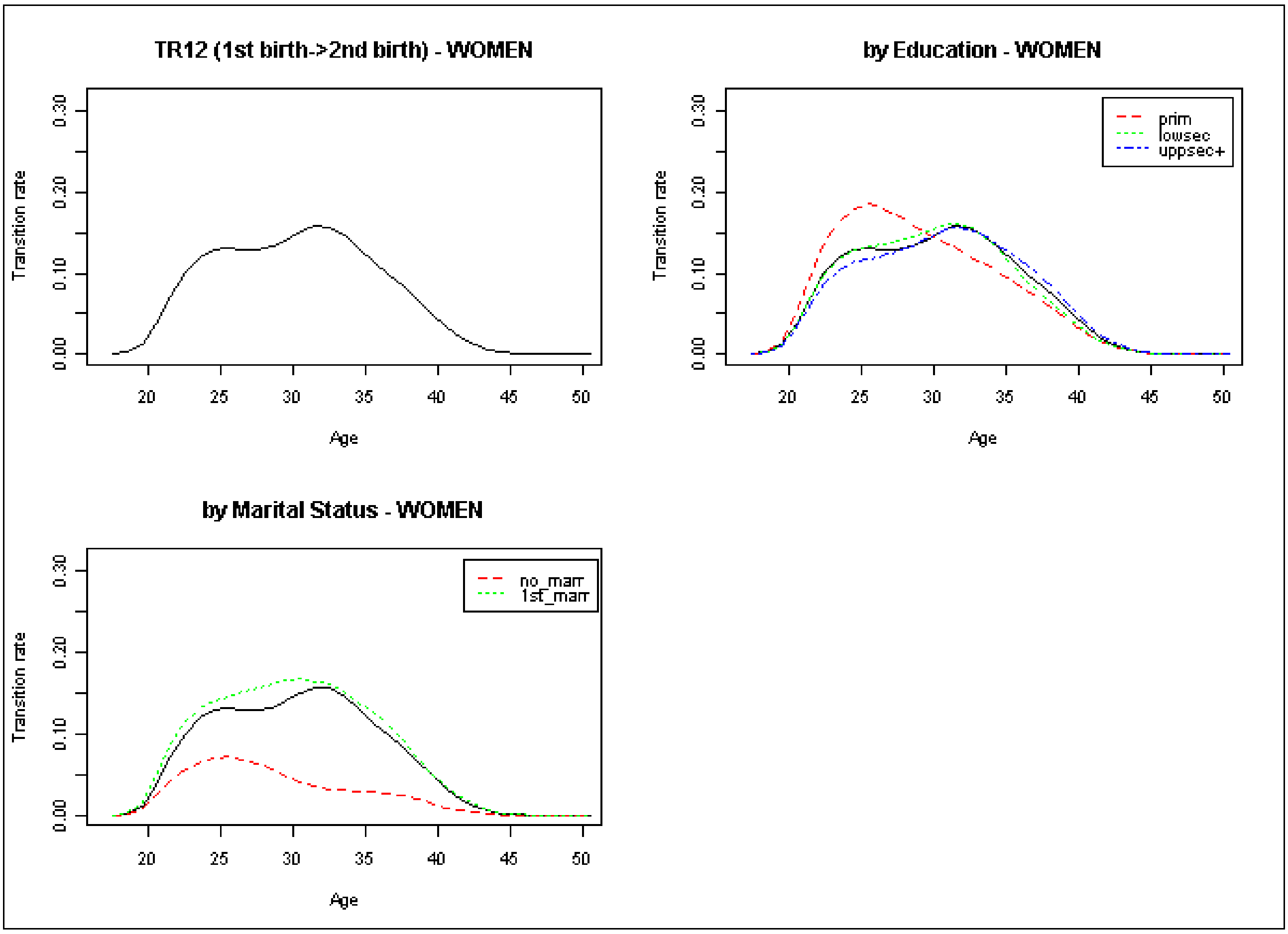
	int1	int2	int3	tot
prim	22	15	5	42
lowsec	157	217	116	490
uppsec	89	209	117	415
tert	3	57	67	127
no_marr	17	7	5	29
1st_mar	254	482	296	1032
2nd mar	0	3	2	5
div/wid	0	6	3	9
par_hom	1	4	0	5
no_part	5	1	5	11
partner	265	493	301	1059
tot	271	497	306	1074

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+	no_marr	1st_mar
17	5e-04	1.4122	1.0097	0.8976	0.7772	1.5611
18	0.0026	1.4109	1.0088	0.8968	0.7406	1.4875
19	0.0114	1.4039	1.0038	0.8924	0.6997	1.4054
20	0.0363	1.3889	0.9931	0.8829	0.6531	1.3119
21	0.0721	1.3704	0.9798	0.8711	0.6066	1.2185
22	0.1012	1.358	0.971	0.8632	0.5695	1.1439
23	0.1198	1.3612	0.9733	0.8653	0.5488	1.1023
24	0.1295	1.3827	0.9886	0.8789	0.545	1.0947
25	0.131	1.4148	1.0116	0.8993	0.5507	1.1062
26	0.1294	1.3848	1.0522	0.946	0.5296	1.1788
27	0.1292	1.3295	1.0756	0.9775	0.4905	1.2092
28	0.133	1.2129	1.0852	1.0019	0.4209	1.2137
29	0.1411	1.0637	1.0772	1.0115	0.3405	1.1792
30	0.1509	0.9308	1.0532	1.0023	0.2745	1.1119
31	0.1574	0.841	1.0251	0.9834	0.2333	1.0465
32	0.1561	0.7716	1.0153	0.9815	0.2086	1.0369
33	0.1463	0.7681	0.9871	0.9957	0.2146	1.0288
34	0.1311	0.7747	0.972	1.0234	0.2303	1.064
35	0.1147	0.7839	0.9463	1.0654	0.2524	1.1012
36	0.0993	0.7875	0.9071	1.1052	0.2728	1.113
37	0.0843	0.7825	0.8649	1.1275	0.2842	1.0949
38	0.0685	0.7733	0.8318	1.1327	0.2857	1.0613
39	0.0515	0.7695	0.8053	1.1452	0.2858	1.0235
40	0.0346	0.776	0.8121	1.1549	0.2856	1.0228
41	0.0209	0.7967	0.8337	1.1857	0.293	1.0492
42	0.0114	0.8276	0.866	1.2316	0.3068	1.0986
43	0.0058	0.8598	0.8997	1.2796	0.3223	1.1544
44	0.0026	0.8838	0.9249	1.3154	0.3338	1.1953

45	0.001	0.8943	0.9358	1.3309	0.3372	1.2076
46	3e-04	0.8924	0.9339	1.3282	0.3332	1.1932
47	1e-04	0.8845	0.9255	1.3163	0.3256	1.1662
48	0	0.8768	0.9176	1.3049	0.3187	1.1413
49	0	0.8727	0.9132	1.2988	0.3142	1.1251
50	0	0.8713	0.9117	1.2967	0.3115	1.1155


TR12 (1st birth->2nd birth) - MEN
by Education - MEN
by Marital Status - MEN
Transition rate
Age
prim
lowsec
uppsec
tert
no_marr
1st_marr
0.00
0.10
0.20
0.30
15
20
25
30
35
40
45
50


TR12 (1st birth->2nd birth) - WOMEN
by Education - WOMEN
by Marital Status - WOMEN
Transition rate
Age
prim
lowsec
uppsec+
no_marr
1st_marr
0.00
0.10
0.20
0.30
20
25
30
35
40
45
50

TR13 (2birth->3th birth) - Italy

Parameters
wl= 10 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
35 40

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	25	17	22	64
lowsec	96	96	65	257
uppsec	14	61	27	102
tert	8	29	28	65
no_marr	9	1	7	17
1st_mar	132	195	132	459
2nd mar	0	4	2	6
div/wid	1	4	2	7
par_hom	1	2	1	4
no_part	4	1	1	6
partner	137	201	140	478
tot	142	204	143	488

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert
21	9e-04	1.5034	0.9252	0.3599	1.6554
22	0.0029	1.5213	0.9362	0.3642	1.6751
23	0.0089	1.5424	0.9492	0.3692	1.6983
24	0.0225	1.5672	0.9645	0.3752	1.7257
25	0.0402	1.5928	0.9802	0.3813	1.7538
26	0.0517	1.6134	0.9929	0.3862	1.7765
27	0.0563	1.6249	1	0.389	1.7892
28	0.0582	1.6288	1.0024	0.3899	1.7935
29	0.0584	1.6325	1.0046	0.3908	1.7975
30	0.0556	1.6453	1.0125	0.3939	1.8116
31	0.0499	1.594	1.0086	0.4508	1.8479
32	0.0427	1.5654	1.0156	0.5055	1.8989
33	0.0359	1.5006	1.0148	0.5875	1.9583
34	0.0309	1.3949	1.0004	0.6889	2.0117
35	0.0281	1.2707	0.9749	0.7865	2.0457
36	0.0269	1.1602	0.9459	0.8576	2.0547
37	0.0266	1.079	0.9193	0.8965	2.0436
38	0.0262	0.9815	0.8858	0.9395	2.0252
39	0.0248	0.9957	0.893	0.9012	1.9819
40	0.0222	1.0108	0.9011	0.8643	1.9414
41	0.019	1.0412	0.9199	0.8143	1.8935
42	0.0157	1.0786	0.9437	0.7585	1.8427
43	0.0127	1.1092	0.9631	0.7114	1.7991
44	0.0102	1.1269	0.9739	0.6806	1.7689
45	0.0082	1.146	0.986	0.6516	1.7423
46	0.0066	1.1409	0.9817	0.6488	1.7346
47	0.0055	1.1345	0.9761	0.6451	1.7248
48	0.0045	1.1246	0.9676	0.6395	1.7098
49	0.0021	1.1111	0.956	0.6318	1.6893

50	1e-04	1.0956	0.9427	0.623	1.6657

Knots - WOMEN
32 36

Covariates - WOMEN

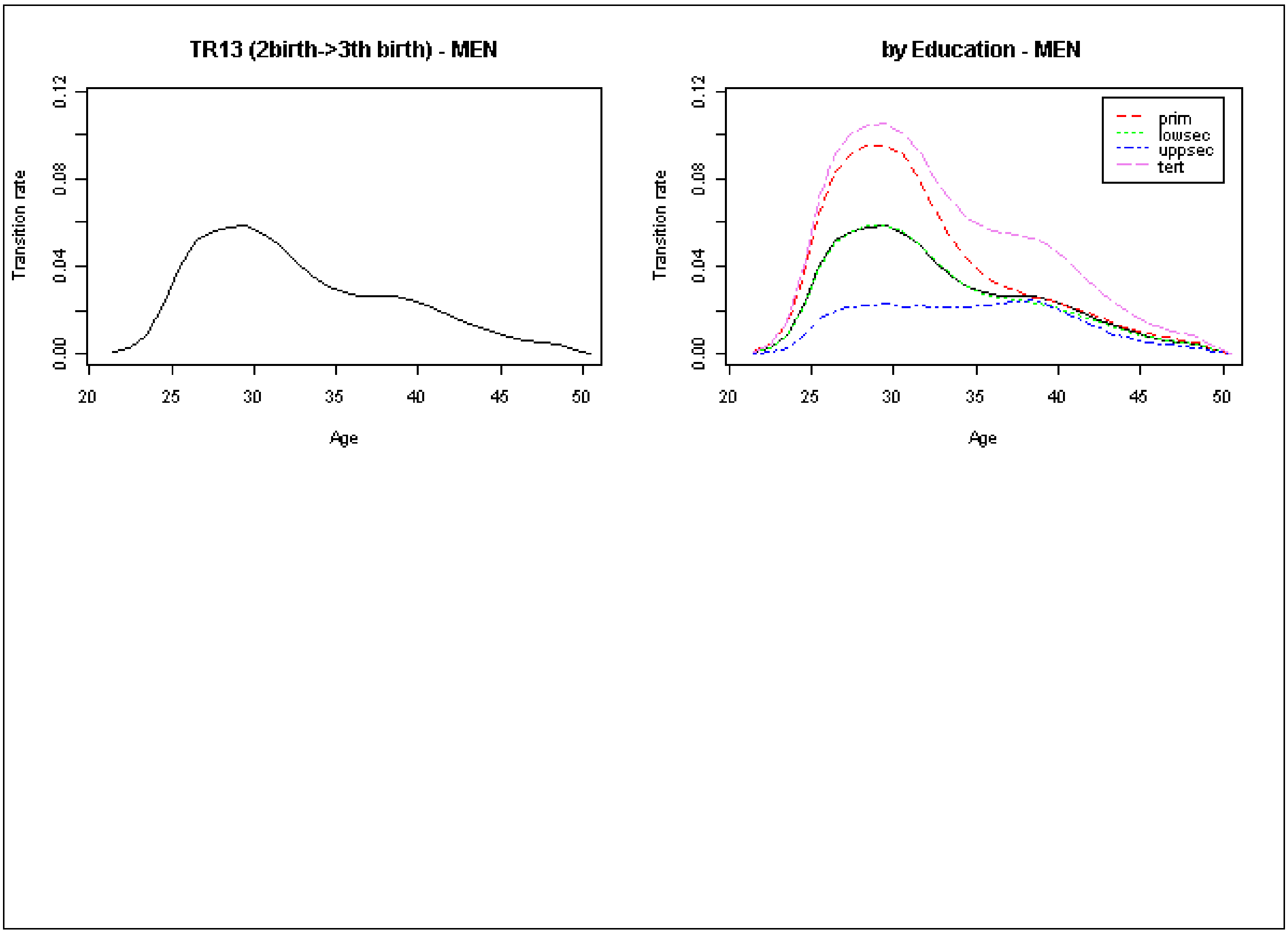
	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

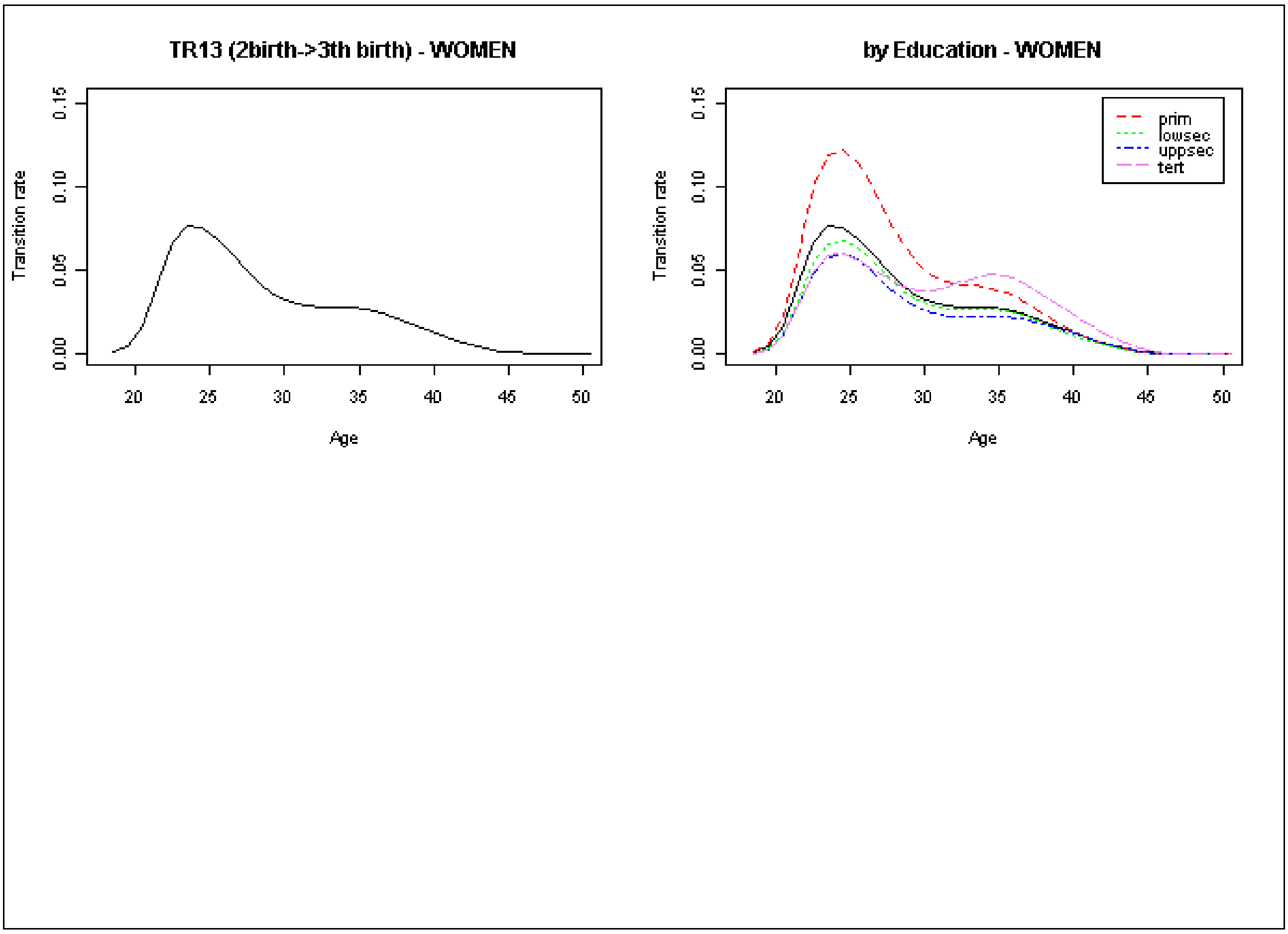
Number of events - WOMEN

	int1	int2	int3	tot
prim	27	22	20	69
lowsec	88	108	64	260
uppsec	28	48	47	123
tert	3	24	26	53
no_marr	7	3	2	12
1st_mar	138	198	142	478
2nd mar	0	0	5	5
div/wid	1	2	8	11
par_hom	1	0	1	2
no_part	4	3	1	8
partner	140	200	155	495
tot	146	203	157	505

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert
18	0.0013	1.2254	0.6793	0.6012	0.6061
19	0.005	1.2734	0.7059	0.6247	0.6299
20	0.017	1.3286	0.7366	0.6518	0.6572
21	0.0427	1.3952	0.7735	0.6845	0.6902
22	0.0673	1.4718	0.8159	0.7221	0.7281
23	0.0766	1.5503	0.8594	0.7606	0.7669
24	0.0755	1.618	0.897	0.7938	0.8004
25	0.0692	1.6644	0.9227	0.8165	0.8233
26	0.0598	1.6874	0.9354	0.8278	0.8347
27	0.05	1.6476	0.9302	0.8177	0.9092
28	0.0414	1.6142	0.926	0.8094	0.9727
29	0.0351	1.5703	0.9241	0.8004	1.0763
30	0.0311	1.5241	0.9282	0.7943	1.2197
31	0.0291	1.4867	0.9393	0.7938	1.3796
32	0.0284	1.4648	0.9546	0.7985	1.5226
33	0.0283	1.4542	0.9681	0.8041	1.6256
34	0.0281	1.4158	0.9678	0.797	1.7241
35	0.0271	1.3732	0.9558	0.8233	1.7445
36	0.025	1.3184	0.9353	0.8422	1.7491
37	0.0219	1.2391	0.9069	0.8735	1.7617
38	0.0184	1.1544	0.8791	0.9139	1.7852
39	0.0147	1.0885	0.8595	0.9515	1.8123
40	0.0113	1.0502	0.85	0.979	1.8361
41	0.0083	1.0146	0.8425	1.0083	1.8636
42	0.0057	1.015	0.8428	1.0087	1.8644
43	0.0036	1.0095	0.8382	1.0032	1.8543
44	0.0021	0.9959	0.827	0.9898	1.8294
45	0.001	0.9741	0.8089	0.9681	1.7893
46	4e-04	0.9453	0.785	0.9395	1.7364
47	1e-04	0.9117	0.757	0.906	1.6747
48	0	0.8755	0.727	0.8701	1.6081
49	0	0.8387	0.6964	0.8335	1.5406
50	0	0.8027	0.6665	0.7977	1.4744


TR13 (2birth->3th birth) - MEN
Transition rate
Age
by Education - MEN
prim
lowsec
uppsec
tert


TR13 (2birth->3th birth) - WOMEN
Transition rate
Age
by Education - WOMEN
prim
lowsec
uppsec
tert

TR14 (3th birth->4th birth) - Italy

Parameters
wl= 10 minage= 15 maxage= 50 outf= TRUE cpa= TRUE nmin= 10 lft= TRUE rgt= TRUE

Knots - MEN
35 39

Covariates - MEN

	code	ncat	pvalue
EDU	3	3	0.085
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	4	13	4	21
lowsec	19	19	9	47
uppsec	3	5	4	12
tert	1	1	4	6
no_marr	3	0	2	5
1st_mar	23	36	18	77
2nd mar	0	0	1	1
div/wid	0	2	1	3
par_hom	0	0	0	0
no_part	3	0	2	5
partner	23	38	19	80
tot	26	38	21	85

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec+
24	7e-04	0.4259	1.104	1.1866
25	0.0046	0.432	1.1197	1.2036
26	0.0196	0.4366	1.1316	1.2163
27	0.035	0.4386	1.1368	1.2219
28	0.0394	0.4382	1.1358	1.2209
29	0.0402	0.4369	1.1324	1.2172
30	0.0402	0.4364	1.131	1.2157
31	0.0401	0.438	1.1352	1.2201
32	0.0397	0.5849	1.0985	1.1536
33	0.039	0.7431	1.0697	1.0943
34	0.0378	1.0014	1.0212	0.9957
35	0.0361	1.3317	0.9643	0.8753
36	0.0338	1.6547	0.9231	0.7742
37	0.0307	1.9089	0.9087	0.7151
38	0.0268	2.1597	0.8823	0.6428
39	0.0224	2.0785	0.9021	0.7182
40	0.0177	1.9185	0.9029	0.7947
41	0.0134	1.6456	0.8889	0.8963
42	0.0099	1.369	0.8656	0.9823
43	0.0071	1.183	0.8396	1.0208
44	0.0051	1.0419	0.8188	1.0479
45	0.0037	1.0235	0.8043	1.0293
46	0.0026	1.0182	0.8002	1.024
47	0.0018	1.026	0.8063	1.0319
48	7e-04	1.0457	0.8218	1.0518
49	1e-04	1.0747	0.8445	1.0808
50	0	1.1088	0.8714	1.1152

Knots - WOMEN

31 36

Covariates - WOMEN

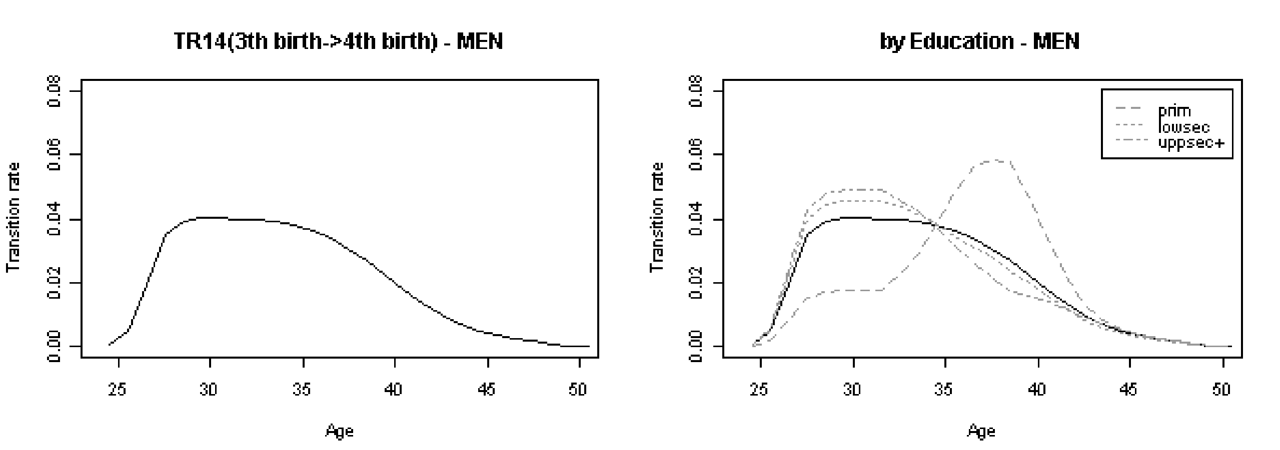
	code	ncat	pvalue
EDU	3	3	0.135
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - WOMEN

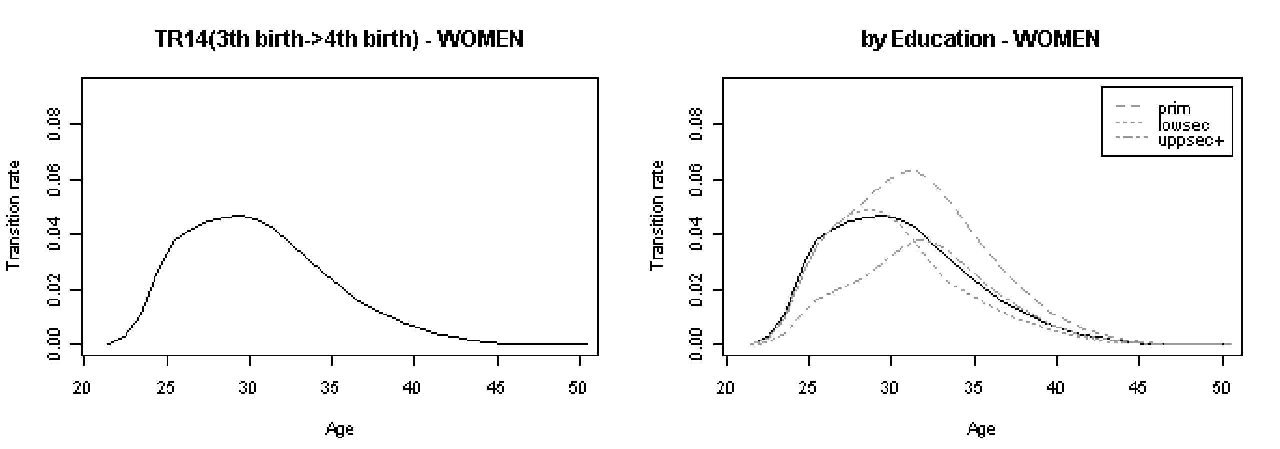
	int1	int2	int3	tot
prim	7	11	9	27
lowsec	13	18	9	40
uppsec	2	9	4	15
tert	0	1	3	4
no_marr	0	0	0	0
1st_mar	21	38	24	83
2nd mar	0	0	1	1
div/wid	0	1	0	1
par_hom	0	0	0	0
no_part	0	0	0	0
partner	21	39	25	85
tot	21	39	25	85

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+
21	5e-04	0.7759	0.7778	0.352
22	0.0027	0.8168	0.8188	0.3706
23	0.0113	0.8593	0.8615	0.3899
24	0.0273	0.9035	0.9057	0.4099
25	0.038	0.9503	0.9526	0.4312
26	0.0425	1.0018	1.0043	0.4545
27	0.045	1.0599	1.0626	0.4809
28	0.0464	1.1492	1.0618	0.5517
29	0.0467	1.2532	1.0399	0.6413
30	0.0453	1.3796	0.9568	0.7692
31	0.042	1.5047	0.8534	0.9028
32	0.0371	1.6003	0.7843	1.0016
33	0.0315	1.6719	0.721	1.0796
34	0.026	1.6942	0.735	1.0905
35	0.0211	1.7019	0.7421	1.0925
36	0.0168	1.6987	0.7465	1.0859
37	0.0132	1.688	0.7491	1.0734
38	0.0102	1.6712	0.7488	1.057
39	0.0076	1.648	0.744	1.0379
40	0.0055	1.6177	0.734	1.016
41	0.0039	1.5798	0.721	0.9889
42	0.0027	1.5379	0.7018	0.9627
43	0.0018	1.4936	0.6816	0.9349
44	0.0011	1.4499	0.6617	0.9076
45	6e-04	1.4089	0.643	0.882
46	3e-04	1.3711	0.6257	0.8583
47	1e-04	1.3358	0.6096	0.8362
48	0	1.3022	0.5943	0.8151
49	0	1.2695	0.5793	0.7947
50	0	1.2374	0.5647	0.7746



TR14(3th birth->4th birth) - MEN
by Education - MEN
Transition rate
Age
prim
lowsec
uppsec+



TR14(3th birth->4th birth) - WOMEN
by Education - WOMEN
Transition rate
Age
prim
lowsec
uppsec+

7. Age profiles for the Netherlands

We use data from Netherlands "Fertility and Family Survey" (FFS-NL). 8145 individuals aged 18-63 were interviewed between February and June 2003. Since 1974, Statistics Netherlands organizes the Netherlands Fertility and Family Survey (FFS-NL) collecting longitudinal information on leaving parental home, cohabitation, marriage, and childbearing. FSS-NL permits to analyze all the 14 transitions (table 17) because there are dates for every considered event (table 16). However, fertility behaviors have been reported only for men (we do not have dates of births for children for the man subsample). This lack of information has two main effects: transitions TR11-TR14 cannot be calculated for men and that the time varying covariate CHI is never available for men. Consistency check (table 18) shows a reduced number of inconsistent cases.
The fact that information are limited to individuals younger than 64 years does not represent a problem because almost all events in the field of family and fertility are experienced before. This means that, as it will be clear in the following pages, we can suppose that the transition rates are zero after 63 years for all transition but TR3 (1st marriage → death of spouse). Given that in this case transition rates are increasing at the older ages, we can extrapolate missing rates using, for example, a third degree polynomial.

Table 16. Missing data in FFS-NL

```
> chkfile("NETHERL.dat")
[1] ____________________________________
[1] Check available data
[1] File NETHERL.dat checked: OK
[1] ____________________________________
```

Table 17 Transitions that can be analyzed with Italy FFS-NL

TR1 never-married → married (1st marriage)
TR2 married (1st marriage)→ divorced
TR3 married (1st marriage)→ widowed
TR4 divorced→ married (2nd marriage)
TR5 widowed→ married (2nd marriage)
TR6 at parental home (never in union) → first union
TR7 at parental home→ alone/with others (never in union)
TR8 alone/ with others (never in union) → first union
TR9 first union→ separated (after 1st union disruption)
TR10 alone or with other persons (after the 1st union disruption)→ with a partner (2nd union)
TR11 childless → child (only women)
TR12 1 child →2 children (only women)
TR13 2 children → 3 children (only women)
TR14 3 children → 4 children (only women)

Table 18. Consistency check on FSS-NL.

```
> consistency("NETHERL.dat")
[1] Consistency check. File: NETHERL.dat
[1] ____________________________________________
[1] 1st union<birth+14 - noc: 8
[1] 1st marriage<birth +14 - noc: 5
[1] divorce<1st marriage - noc: 2
[1] 2nd union<first union - noc: 11
[1] 2nd union<first union disruption - noc: 3
[1] 2nd marriage<1st marriage - noc: 1
[1] 2nd marriage<divorce - noc: 3
[1] 1st child<birth + 14 - noc: 2
[1] 2nd child<1st child -  noc: 1
[1] 4th child<3rd child - noc: 1
[1] ____________________________________________
```

TR1 (never married->1st marriage) - Netherlands

Parameters
wl= 5 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
29 33

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0.392
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	18	20	22	60
lowsec	52	48	32	132
uppsec	20	25	19	64
tert	8	15	20	43
no_ch	98	108	93	299
1ch	0	0	0	0
2ch	0	0	0	0
3+ch	0	0	0	0
par_hom	23	2	2	27
no_part	75	101	84	260
1st_un	0	4	8	12
tot	98	108	93	299

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert
15	0	0.8028	1.2485	1.1911	0.7923
16	0	0.7892	1.2274	1.171	0.7789
17	0	0.7761	1.207	1.1515	0.766
18	1e-04	0.7638	1.1878	1.1331	0.7538
19	5e-04	0.7525	1.1703	1.1165	0.7427
20	0.0016	0.7429	1.1553	1.1021	0.7331
21	0.0035	0.7352	1.1434	1.0908	0.7256
22	0.0067	0.73	1.1353	1.0831	0.7205
23	0.0117	0.7276	1.1316	1.0796	0.7181
24	0.0192	0.7282	1.1325	1.0804	0.7187
25	0.0289	0.7303	1.1241	1.0783	0.7398
26	0.0406	0.7352	1.1198	1.0803	0.7643
27	0.0527	0.7419	1.111	1.0817	0.802
28	0.0636	0.7501	1.1008	1.0837	0.8478
29	0.0717	0.7602	1.096	1.0896	0.8913
30	0.0764	0.7719	1.1002	1.1008	0.926
31	0.0776	0.7839	1.1043	1.1121	0.9615
32	0.0761	0.792	1.0981	1.1406	1.0026
33	0.0728	0.8005	1.0968	1.1652	1.036
34	0.0684	0.8057	1.0842	1.1916	1.0773
35	0.0636	0.8073	1.0602	1.2192	1.1255
36	0.0587	0.8062	1.0296	1.2456	1.1754
37	0.0538	0.8038	0.9994	1.2678	1.2194
38	0.049	0.8011	0.9751	1.2837	1.2523
39	0.0443	0.7985	0.9577	1.2932	1.2731
40	0.0397	0.7929	0.9312	1.3031	1.2991
41	0.0353	0.7915	0.9294	1.3007	1.2966
42	0.0311	0.7893	0.9269	1.2972	1.2931
43	0.027	0.787	0.9242	1.2934	1.2893

44	0.0235	0.7851	0.9219	1.2902	1.2862
45	0.0203	0.7841	0.9207	1.2885	1.2845
46	0.0175	0.7843	0.921	1.2889	1.2849
47	0.0151	0.786	0.923	1.2918	1.2877
48	0.013	0.7894	0.9269	1.2972	1.2932
49	0.0112	0.7941	0.9325	1.305	1.301
50	0.0095	0.8	0.9395	1.3148	1.3107
51	0.0079	0.8068	0.9474	1.3258	1.3217
52	0.0064	0.8139	0.9558	1.3376	1.3334
53	0.005	0.8213	0.9644	1.3497	1.3454
54	0.0037	0.8286	0.973	1.3617	1.3574
55	0.0026	0.8358	0.9815	1.3736	1.3693
56	0.0018	0.8433	0.9902	1.3858	1.3815
57	0.0012	0.8511	0.9994	1.3987	1.3943
58	7e-04	0.8595	1.0093	1.4126	1.4081
59	5e-04	0.8688	1.0203	1.4279	1.4234
60	3e-04	0.8791	1.0323	1.4447	1.4402
61	2e-04	0.8902	1.0454	1.463	1.4584
62	1e-04	0.902	1.0592	1.4823	1.4777
63	1e-04	0.9142	1.0735	1.5024	1.4977

Knots - WOMEN
27 30

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0
MAR	0	1	NA
CHI	1	2	0.011
LIV	0	1	NA

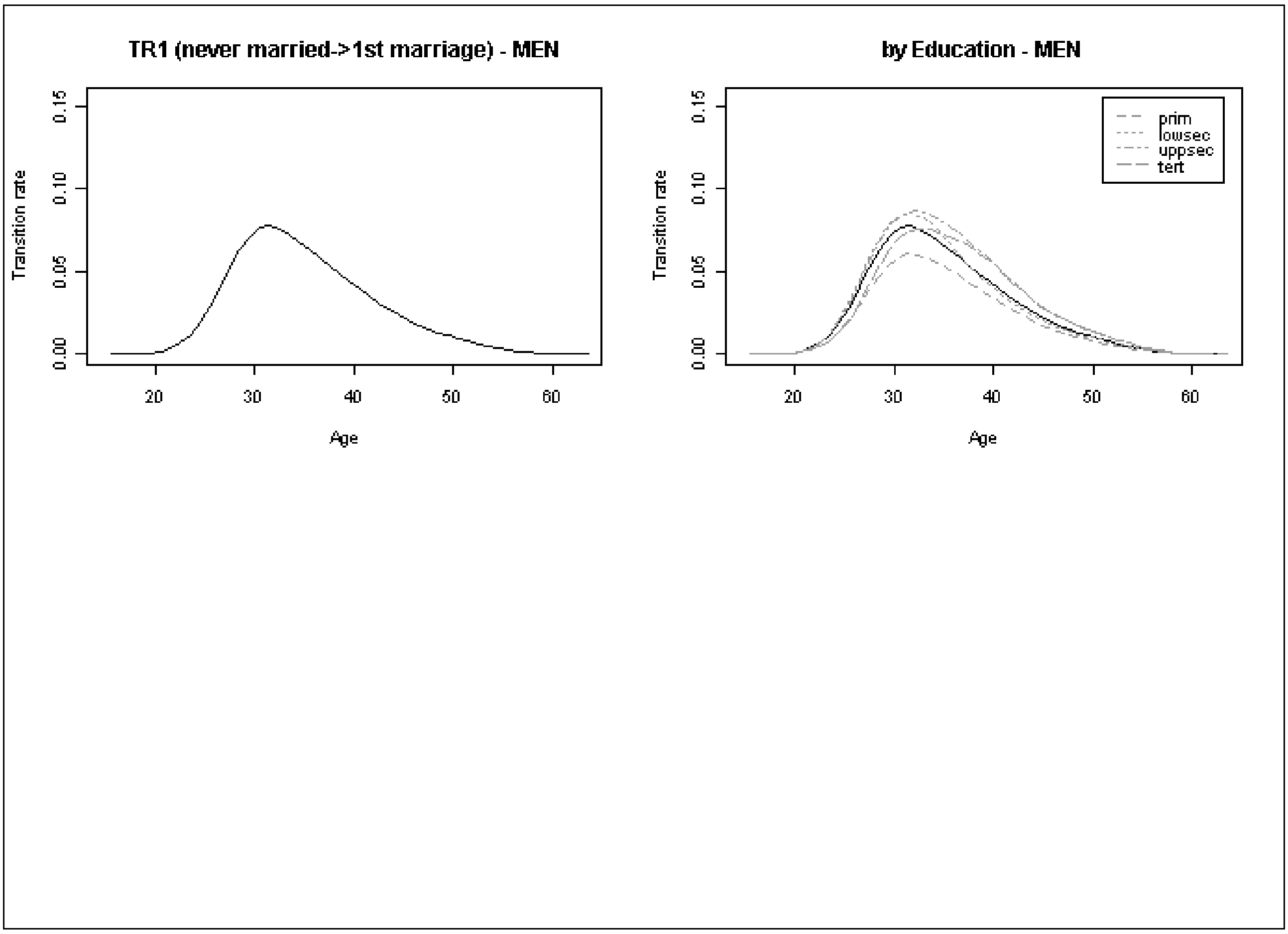
Number of events - WOMEN

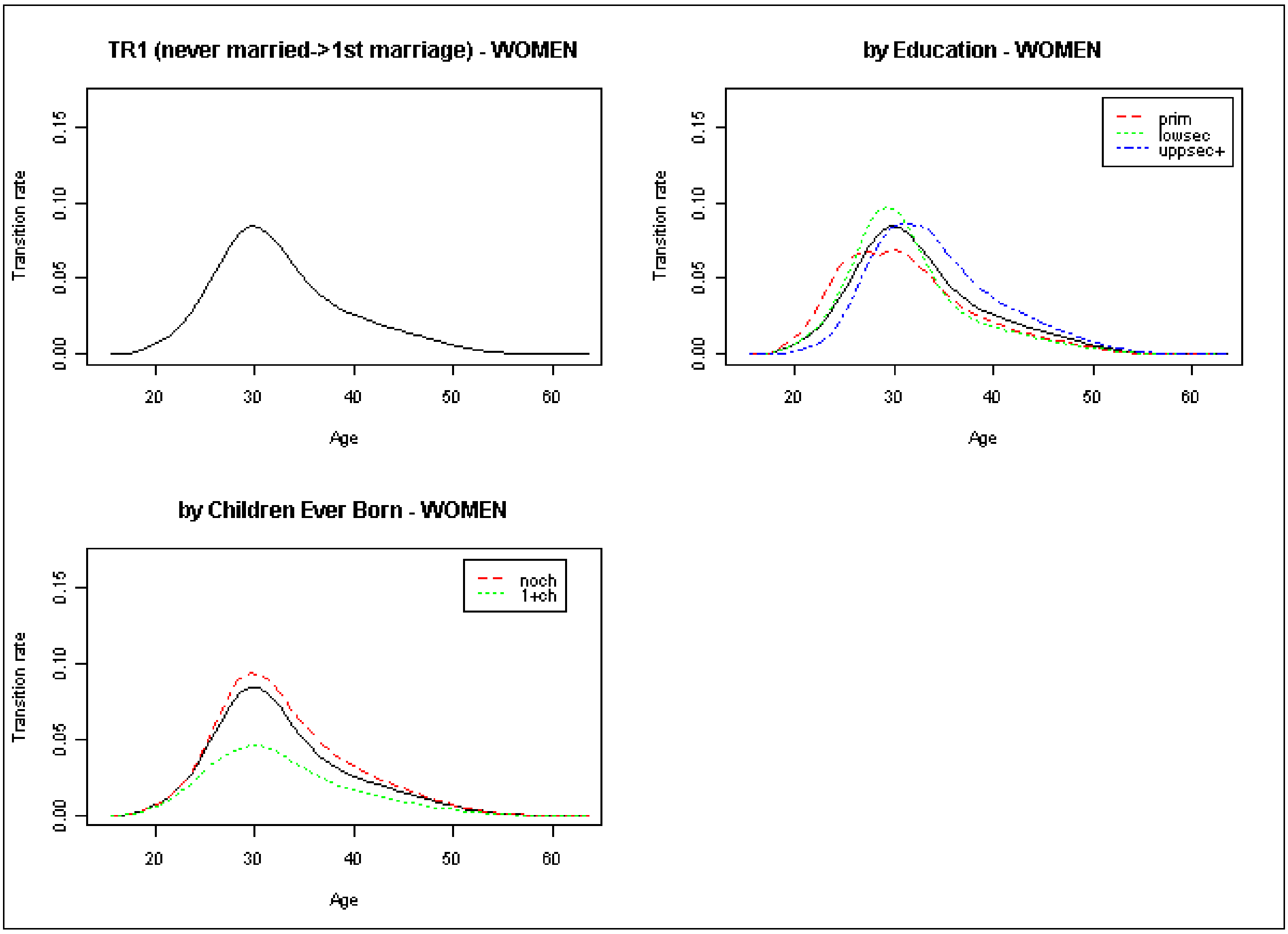
	int1	int2	int3	tot
prim	28	17	17	62
lowsec	49	55	29	133
uppsec	9	19	21	49
tert	2	18	19	39
no_ch	84	98	71	253
1ch	2	6	10	18
2ch	2	4	4	10
3+ch	0	0	2	2
par_hom	26	0	2	28
no_part	62	106	78	246
1st_un	0	2	6	8
tot	89	108	86	283

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+	noch	1+ch
15	0	1.2803	0.7674	0.3086	1.0592	0.8283
16	1e-04	1.3514	0.81	0.3257	1.0565	0.8261
17	7e-04	1.4253	0.8544	0.3435	1.0537	0.8239
18	0.0026	1.5004	0.8993	0.3616	1.0503	0.8213
19	0.0054	1.5741	0.9435	0.3794	1.0458	0.8178
20	0.0087	1.6434	0.9851	0.3961	1.0392	0.8126
21	0.0132	1.7053	1.0222	0.411	1.0294	0.805
22	0.0192	1.7569	1.0531	0.4234	1.0155	0.7941
23	0.0271	1.6771	1.0885	0.4883	1.0286	0.7604
24	0.037	1.55	1.1196	0.566	1.0445	0.7198
25	0.0485	1.326	1.152	0.6804	1.0768	0.6661
26	0.0606	1.0924	1.1784	0.7923	1.1063	0.6144
27	0.0718	0.9377	1.1924	0.8628	1.1172	0.5784
28	0.0802	0.813	1.201	0.9169	1.1264	0.5512

29	0.0844	0.8124	1.1475	0.973	1.1129	0.5482
30	0.0839	0.8122	1.1032	1.0202	1.1111	0.5504
31	0.0791	0.8142	1.0386	1.0952	1.1188	0.559
32	0.0715	0.818	0.9585	1.192	1.1349	0.5732
33	0.0626	0.8226	0.8791	1.2901	1.1578	0.5911
34	0.0538	0.8265	0.8165	1.3683	1.1849	0.6102
35	0.046	0.8287	0.7751	1.4188	1.2122	0.6277
36	0.0395	0.8294	0.7243	1.4756	1.2332	0.6429
37	0.0344	0.8259	0.7213	1.4694	1.2499	0.6515
38	0.0304	0.82	0.7162	1.4589	1.2569	0.6552
39	0.027	0.8121	0.7092	1.4448	1.2552	0.6543
40	0.0244	0.8027	0.701	1.428	1.247	0.6501
41	0.0222	0.7927	0.6922	1.4102	1.2355	0.6441
42	0.0201	0.7829	0.6837	1.3928	1.2237	0.6379
43	0.0181	0.774	0.676	1.3771	1.2136	0.6327
44	0.0161	0.7666	0.6695	1.3639	1.2063	0.6288
45	0.0141	0.7609	0.6645	1.3537	1.2015	0.6263
46	0.0122	0.7568	0.6609	1.3464	1.198	0.6245
47	0.0103	0.7542	0.6586	1.3417	1.1944	0.6226
48	0.0085	0.7528	0.6574	1.3393	1.1892	0.6199
49	0.0069	0.7524	0.6571	1.3386	1.1818	0.616
50	0.0054	0.7528	0.6574	1.3393	1.1719	0.6109
51	0.0041	0.754	0.6584	1.3414	1.1604	0.6049
52	0.003	0.7558	0.6601	1.3447	1.1485	0.5987
53	0.0021	0.7584	0.6623	1.3493	1.1374	0.5929
54	0.0014	0.7617	0.6652	1.3551	1.1282	0.5881
55	9e-04	0.7656	0.6686	1.362	1.121	0.5844
56	6e-04	0.7699	0.6724	1.3698	1.1157	0.5816
57	4e-04	0.7745	0.6764	1.378	1.1114	0.5793
58	2e-04	0.7791	0.6804	1.3861	1.1068	0.577
59	1e-04	0.7835	0.6842	1.3939	1.1011	0.574
60	1e-04	0.7875	0.6877	1.401	1.0936	0.5701
61	0	0.7911	0.6909	1.4074	1.0843	0.5652
62	0	0.7944	0.6938	1.4134	1.0736	0.5597
63	0	0.7976	0.6966	1.4191	1.0624	0.5538


TR1 (never married->1st marriage) - MEN
by Education - MEN
Transition rate
Age
prim
lowsec
uppsec
tert


TR1 (never married->1st marriage) - WOMEN
by Education - WOMEN
by Children Ever Born - WOMEN
Transition rate
Age
prim
lowsec
uppsec+
noch
1+ch

TR2 (1st marriage->divorce) - Netherlands

Parameters
wl= 15 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
34 41

Covariates - MEN

	code	ncat	pvalue
EDU	3	3	0.005
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	34	41	25	100
lowsec	30	31	32	93
uppsec	12	7	16	35
tert	3	10	8	21
no_ch	79	88	81	248
1ch	0	0	0	0
2ch	0	0	0	0
3+ch	0	0	0	0
tot	79	88	81	249

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec+
17	2e-04	1.3063	0.8505	0.7306
18	5e-04	1.3079	0.8516	0.7315
19	0.0015	1.3095	0.8526	0.7324
20	0.0038	1.3112	0.8537	0.7333
21	0.0076	1.3128	0.8548	0.7342
22	0.0113	1.3144	0.8558	0.7351
23	0.0133	1.316	0.8569	0.736
24	0.0141	1.3176	0.8579	0.7369
25	0.0142	1.3192	0.8589	0.7378
26	0.0142	1.3207	0.8599	0.7386
27	0.014	1.3221	0.8608	0.7394
28	0.0137	1.3492	0.8652	0.7258
29	0.0135	1.3646	0.868	0.7185
30	0.0132	1.386	0.8715	0.7078
31	0.0129	1.4136	0.8758	0.6935
32	0.0125	1.4462	0.8808	0.6762
33	0.0122	1.4809	0.886	0.6579
34	0.0119	1.5138	0.8911	0.6406
35	0.0115	1.5418	0.8956	0.6263
36	0.0111	1.5638	0.8994	0.6156
37	0.0107	1.5803	0.9026	0.6085
38	0.0104	1.609	0.9077	0.595
39	0.01	1.5434	0.9279	0.6248
40	0.0096	1.5129	0.9391	0.6405
41	0.0092	1.4694	0.9542	0.6619
42	0.0088	1.4116	0.9734	0.6896
43	0.0083	1.3405	0.9964	0.7231
44	0.0079	1.2612	1.0217	0.7601
45	0.0075	1.1814	1.0471	0.7973
46	0.0072	1.1091	1.0707	0.8314
47	0.0068	1.0496	1.0908	0.8603
48	0.0064	1.0044	1.107	0.8831

49	0.0061	0.9724	1.1197	0.9004
50	0.0057	0.9042	1.142	0.9327
51	0.0054	0.9069	1.1454	0.9354
52	0.0051	0.9096	1.1487	0.9382
53	0.0048	0.9122	1.1521	0.9409
54	0.0045	0.9149	1.1554	0.9436
55	0.0043	0.9175	1.1587	0.9463
56	0.004	0.9201	1.162	0.949
57	0.0038	0.9227	1.1653	0.9517
58	0.0036	0.9253	1.1686	0.9544
59	0.0033	0.9279	1.1718	0.9571
60	0.0031	0.9305	1.1751	0.9598
61	0.003	0.9331	1.1785	0.9625
62	0.0028	0.9357	1.1818	0.9652
63	0.0026	0.9384	1.1851	0.9679

Knots - WOMEN
32 40

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0.446
MAR	0	1	NA
CHI	2	3	0.062
LIV	0	1	NA

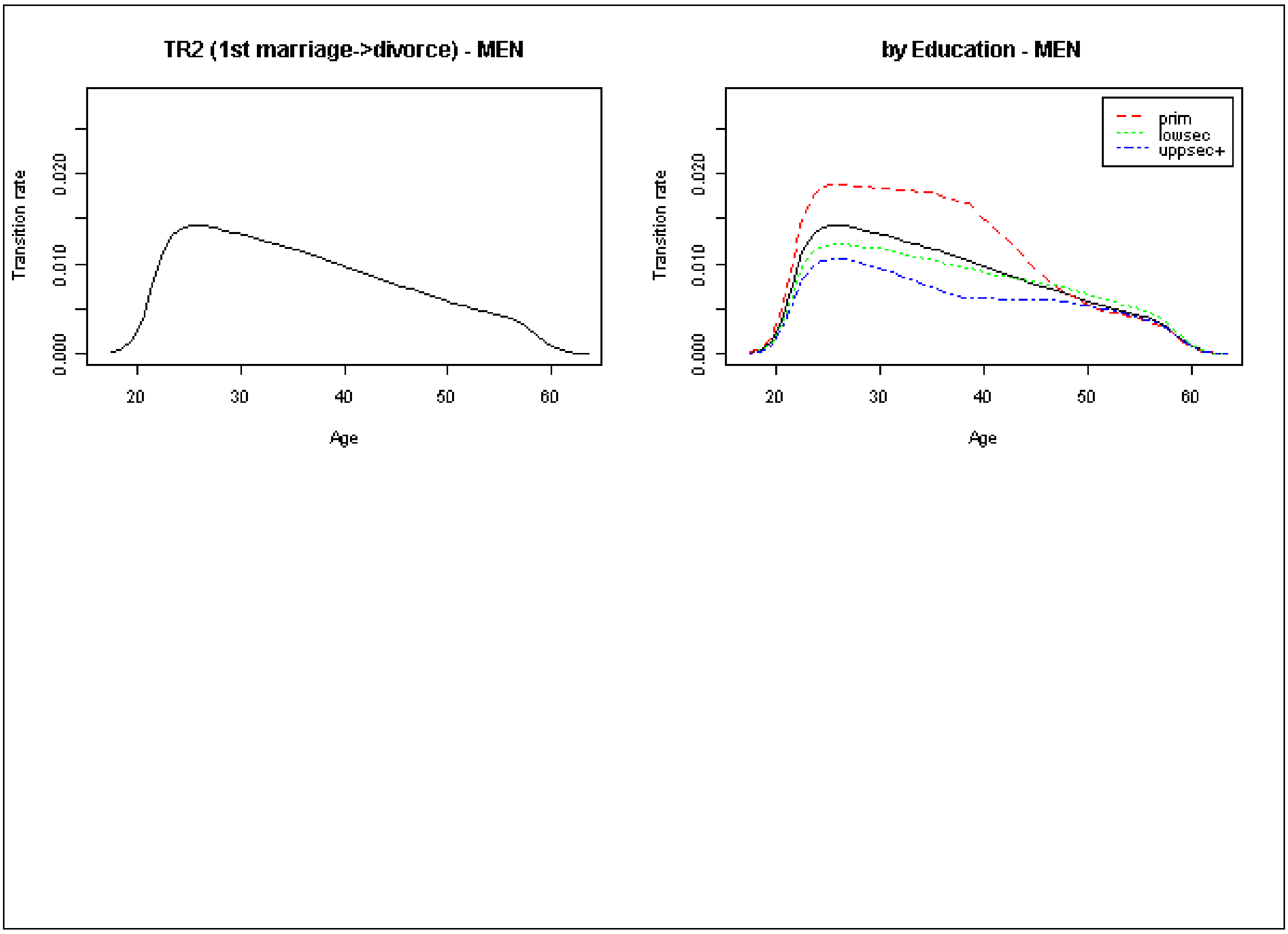
Number of events - WOMEN

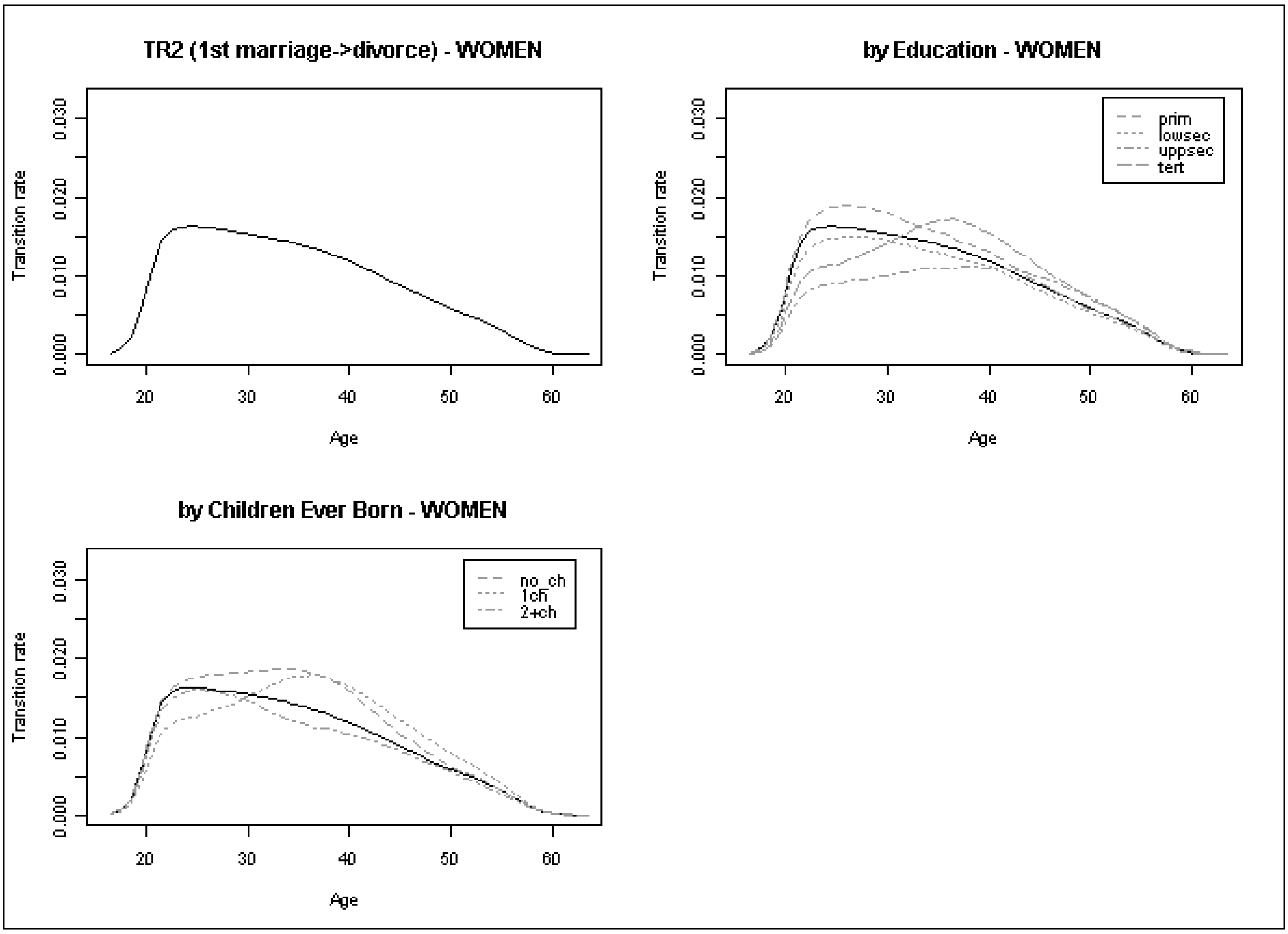
	int1	int2	int3	tot
prim	47	50	50	147
lowsec	43	42	28	113
uppsec	6	13	17	36
tert	4	9	5	18
no_ch	49	20	10	79
1ch	23	28	19	70
2ch	28	48	53	129
3+ch	1	18	18	37
tot	101	114	101	315

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	no_ch	1ch	2+ch
16	2e-04	0.9618	0.7592	0.463	0.5885	0.9283	0.6705	0.846
17	7e-04	0.9839	0.7767	0.4736	0.602	0.9448	0.6825	0.8611
18	0.0022	1.0065	0.7945	0.4845	0.6159	0.9618	0.6947	0.8766
19	0.0058	1.0296	0.8128	0.4956	0.63	0.9791	0.7072	0.8924
20	0.0108	1.0532	0.8314	0.507	0.6445	0.9969	0.7201	0.9086
21	0.0144	1.0773	0.8504	0.5186	0.6592	1.0151	0.7332	0.9252
22	0.0158	1.1018	0.8697	0.5304	0.6742	1.0337	0.7466	0.9421
23	0.0162	1.1265	0.8893	0.5423	0.6893	1.0523	0.7601	0.9591
24	0.0164	1.1514	0.9089	0.5543	0.7046	1.071	0.7736	0.9761
25	0.0162	1.1765	0.9287	0.5663	0.7199	1.0896	0.787	0.9931
26	0.0161	1.1726	0.9304	0.5873	0.7663	1.1117	0.8318	0.9796
27	0.0159	1.1809	0.9398	0.6047	0.8	1.1324	0.8635	0.979
28	0.0157	1.1818	0.9445	0.6246	0.8419	1.1544	0.9034	0.9709
29	0.0155	1.1743	0.9441	0.6472	0.8932	1.1779	0.9528	0.9546
30	0.0153	1.1595	0.9391	0.6723	0.9527	1.2032	1.0106	0.9314
31	0.015	1.141	0.9318	0.6987	1.0167	1.2296	1.0732	0.9049
32	0.0148	1.1233	0.9251	0.7248	1.0798	1.2566	1.1352	0.8799
33	0.0145	1.1104	0.9213	0.7493	1.1373	1.283	1.1918	0.8602
34	0.0142	1.1041	0.9216	0.7712	1.1866	1.308	1.2401	0.8475
35	0.0139	1.1039	0.9254	0.7903	1.2274	1.3305	1.2795	0.8411
36	0.0135	1.0861	0.918	0.8135	1.2842	1.3525	1.3337	0.8165
37	0.0131	1.086	0.9244	0.8576	1.2889	1.344	1.3526	0.8389

38	0.0126	1.0923	0.9328	0.8829	1.2986	1.344	1.3651	0.8515
39	0.0121	1.0941	0.9384	0.9123	1.3037	1.3361	1.3743	0.8638
40	0.0116	1.0909	0.9412	0.9465	1.304	1.3201	1.3803	0.8761
41	0.011	1.0831	0.9412	0.9854	1.2996	1.2967	1.3836	0.8885
42	0.0104	1.0715	0.9389	1.0275	1.2914	1.2676	1.3846	0.9008
43	0.0098	1.0575	0.935	1.0701	1.2806	1.2357	1.3834	0.9121
44	0.0091	1.0428	0.9301	1.1101	1.2688	1.2037	1.3805	0.9215
45	0.0085	1.029	0.9251	1.1446	1.2573	1.1739	1.3758	0.9284
46	0.0079	1.0168	0.9202	1.1722	1.2469	1.1478	1.3695	0.9323
47	0.0073	1.0065	0.9156	1.1924	1.2378	1.1255	1.362	0.9334
48	0.0067	0.9979	0.9114	1.2062	1.2298	1.1067	1.3534	0.932
49	0.0062	0.9798	0.9028	1.238	1.2134	1.0757	1.347	0.9376
50	0.0057	0.9773	0.9005	1.2348	1.2102	1.0668	1.3359	0.9299
51	0.0052	0.9743	0.8977	1.231	1.2065	1.058	1.3249	0.9222
52	0.0048	0.9712	0.8949	1.2271	1.2027	1.0494	1.3141	0.9147
53	0.0044	0.9681	0.892	1.2232	1.1988	1.041	1.3036	0.9074
54	0.004	0.9651	0.8893	1.2194	1.1952	1.0331	1.2936	0.9005
55	0.0036	0.9624	0.8868	1.216	1.1918	1.0256	1.2843	0.894
56	0.0033	0.9599	0.8845	1.2129	1.1887	1.0186	1.2755	0.8879
57	0.0031	0.9577	0.8824	1.21	1.186	1.012	1.2673	0.8821
58	0.0028	0.9556	0.8805	1.2074	1.1834	1.0058	1.2594	0.8767
59	0.0026	0.9537	0.8787	1.205	1.181	0.9997	1.2519	0.8714
60	0.0023	0.9518	0.877	1.2025	1.1786	0.9938	1.2444	0.8662
61	0.0021	0.9498	0.8752	1.2001	1.1762	0.9879	1.2371	0.8611
62	0.002	0.9479	0.8734	1.1977	1.1738	0.9821	1.2298	0.856
63	0.0018	0.946	0.8716	1.1952	1.1714	0.9762	1.2225	0.8509


TR2 (1st marriage->divorce) - MEN
by Education - MEN
prim
lowsec
uppsec+
Transition rate
0.000
0.010
0.020
Age
20
30
40
50
60


TR2 (1st marriage->divorce) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec
tert
by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
0.000
0.010
0.020
0.030
Age
20
30
40
50
60

TR3 (1st marriage->death of spouse) - Netherlands

Parameters
wl= 15 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
39 55

Covariates - MEN

	code	ncat	pvalue
EDU	0	1	NA
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	1	5	4	10
lowsec	4	4	1	9
uppsec	0	1	0	1
tert	2	0	0	2
no_ch	7	10	5	22
1ch	0	0	0	0
2ch	0	0	0	0
3+ch	0	0	0	0
tot	7	10	5	22

Baseline and relative risks - MEN

age	baselin
17	0
18	1e-04
19	2e-04
20	4e-04
21	7e-04
22	8e-04
23	9e-04
24	8e-04
25	8e-04
26	8e-04
27	7e-04
28	7e-04
29	6e-04
30	6e-04
31	6e-04
32	6e-04
33	5e-04
34	5e-04
35	5e-04
36	5e-04
37	5e-04
38	5e-04
39	5e-04
40	5e-04
41	5e-04
42	5e-04
43	5e-04
44	5e-04
45	6e-04
46	6e-04
47	7e-04
48	7e-04

49	8e-04
50	9e-04
51	0.0011
52	0.0012
53	0.0014
54	0.0016
55	0.0019
56	0.0022
57	0.0026
58	0.003
59	0.0035
60	0.0041
61	0.0048
62	0.0055
63	0.0064

Knots - WOMEN
43 53

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0.315
MAR	0	1	NA
CHI	2	3	0.467
LIV	0	1	NA

Number of events - WOMEN

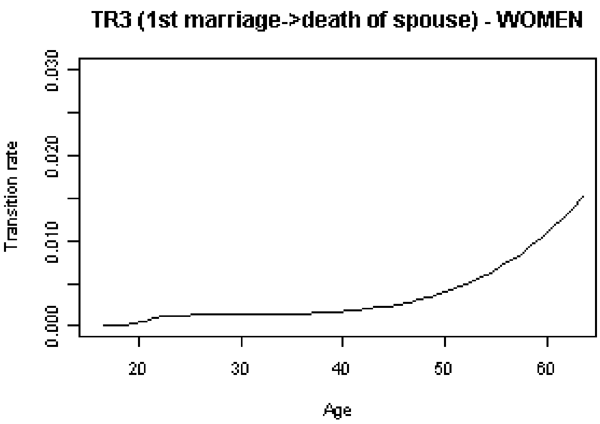
	int1	int2	int3	tot
prim	5	22	14	41
lowsec	11	6	6	23
uppsec	8	1	2	11
tert	0	3	0	3
no_ch	7	1	2	10
1ch	5	8	4	17
2ch	9	13	6	28
3+ch	2	10	8	20
tot	23	32	21	76

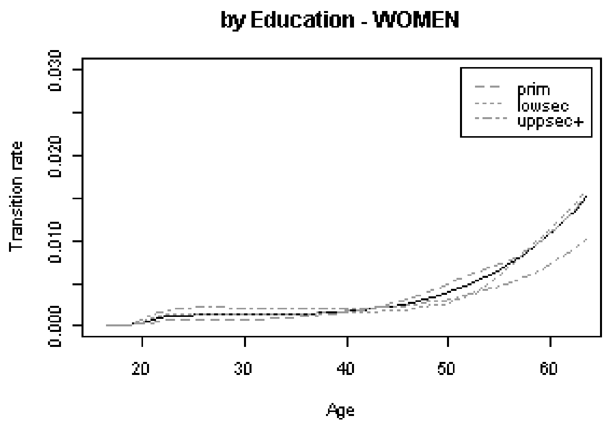
Baseline and relative risks - WOMEN

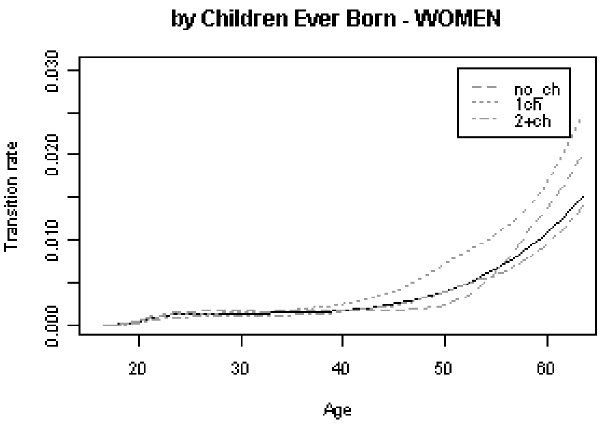
age	baselin	prim	lowsec	uppsec+	no_ch	1ch	2+ch
16	0	0.6942	1.2669	1.8736	1.1701	0.9992	0.7113
17	0	0.6872	1.2542	1.8548	1.1779	1.0058	0.7161
18	1e-04	0.6803	1.2416	1.8361	1.1858	1.0125	0.7208
19	3e-04	0.6735	1.2291	1.8177	1.1936	1.0192	0.7256
20	6e-04	0.6667	1.2167	1.7993	1.2013	1.0258	0.7303
21	9e-04	0.6599	1.2044	1.7811	1.2091	1.0324	0.735
22	0.0011	0.6533	1.1922	1.7631	1.2168	1.039	0.7397
23	0.0012	0.6467	1.1802	1.7454	1.2244	1.0455	0.7443
24	0.0013	0.6402	1.1684	1.7279	1.232	1.052	0.749
25	0.0013	0.6339	1.1568	1.7108	1.2397	1.0586	0.7536
26	0.0013	0.6277	1.1455	1.6941	1.2474	1.0651	0.7583
27	0.0013	0.6217	1.1346	1.6779	1.255	1.0717	0.763
28	0.0013	0.6159	1.124	1.6623	1.2626	1.0781	0.7675
29	0.0013	0.6103	1.1138	1.6472	1.2699	1.0844	0.772
30	0.0013	0.6049	1.104	1.6327	1.2768	1.0902	0.7762
31	0.0013	0.5997	1.0945	1.6187	1.2831	1.0956	0.78
32	0.0013	0.6717	1.0587	1.5437	1.2264	1.168	0.8047
33	0.0014	0.6894	1.0419	1.5125	1.2115	1.1924	0.8138
34	0.0014	0.7125	1.0234	1.4771	1.1905	1.221	0.8238
35	0.0015	0.7418	1.0028	1.4369	1.1624	1.2542	0.8348

36	0.0015	0.7775	0.9798	1.3914	1.127	1.2922	0.8466
37	0.0016	0.8193	0.9545	1.3408	1.0842	1.3348	0.8594
38	0.0016	0.8662	0.9272	1.2856	1.0349	1.3811	0.8727
39	0.0017	0.9166	0.8984	1.2271	0.9807	1.43	0.8864
40	0.0018	0.9683	0.869	1.1674	0.924	1.4793	0.8998
41	0.0019	1.0188	0.8399	1.1084	0.8674	1.5274	0.9125
42	0.002	1.0657	0.8121	1.0525	0.8133	1.5723	0.9243
43	0.0022	1.1074	0.7865	1.0013	0.7641	1.613	0.9349
44	0.0023	1.1428	0.7637	0.9561	0.7212	1.6493	0.9445
45	0.0025	1.1719	0.744	0.9175	0.6853	1.6814	0.9534
46	0.0028	1.1951	0.7275	0.8853	0.6564	1.7105	0.9622
47	0.0031	1.2134	0.7141	0.8593	0.6344	1.7378	0.9714
48	0.0034	1.2278	0.7034	0.8387	0.6185	1.7644	0.9814
49	0.0037	1.2903	0.6776	0.7822	0.5617	1.8421	1.0087
50	0.0042	1.2574	0.7125	0.7682	0.6184	1.8051	0.9905
51	0.0046	1.2345	0.7379	0.7586	0.6629	1.7866	0.982
52	0.0051	1.2023	0.7769	0.7455	0.7286	1.7516	0.9652
53	0.0057	1.1614	0.8286	0.7291	0.8147	1.6998	0.9401
54	0.0063	1.1171	0.8859	0.7114	0.9119	1.6403	0.9112
55	0.007	1.0773	0.9389	0.6958	1.0052	1.5877	0.8858
56	0.0077	1.0475	0.9803	0.6842	1.0834	1.5528	0.8695
57	0.0085	1.0284	1.0091	0.6771	1.144	1.5376	0.8632
58	0.0094	1.0008	1.0485	0.6665	1.223	1.5042	0.8478
59	0.0103	1.0033	1.0511	0.6682	1.2447	1.531	0.8628
60	0.0114	1.0058	1.0537	0.6698	1.2667	1.558	0.878
61	0.0125	1.0082	1.0563	0.6715	1.2889	1.5853	0.8934
62	0.0137	1.0107	1.0588	0.6731	1.3114	1.6129	0.909
63	0.0151	1.0131	1.0614	0.6747	1.3342	1.641	0.9248


TR3 (1st marriage->death of spouse) - MEN
Transition rate
0.000
0.004
0.008
0.012
20
30
40
50
60
Age


TR3 (1st marriage->death of spouse) - WOMEN
Transition rate
0.000
0.010
0.020
0.030
20
30
40
50
60
Age


by Education - WOMEN
prim
lowsec
uppsec+
Transition rate
0.000
0.010
0.020
0.030
20
30
40
50
60
Age


by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
0.000
0.010
0.020
0.030
20
30
40
50
60
Age

TR4 (divorce->second marriage) - Netherlands

Parameters
wl= 20 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
36 44

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0.206
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	20	24	12	56
lowsec	16	16	17	49
uppsec	5	9	11	25
tert	5	12	6	23
no_ch	46	61	47	154
1ch	0	0	0	0
2ch	0	0	0	0
3+ch	0	0	0	0
tot	46	61	47	155

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert
16	8e-04	0.8108	1.2276	0.7692	1.441
17	0.0017	0.813	1.2308	0.7713	1.4448
18	0.0033	0.8151	1.234	0.7733	1.4485
19	0.0064	0.8172	1.2372	0.7753	1.4523
20	0.0118	0.8193	1.2405	0.7773	1.4561
21	0.0207	0.8215	1.2437	0.7793	1.4599
22	0.0327	0.8236	1.2469	0.7814	1.4637
23	0.0459	0.8258	1.2502	0.7834	1.4675
24	0.0571	0.8279	1.2535	0.7855	1.4714
25	0.0645	0.8301	1.2567	0.7875	1.4752
26	0.0684	0.8323	1.26	0.7896	1.4791
27	0.0698	0.8344	1.2633	0.7916	1.4829
28	0.07	0.8366	1.2666	0.7937	1.4868
29	0.0694	0.8388	1.2699	0.7958	1.4907
30	0.0688	0.841	1.2732	0.7979	1.4946
31	0.0676	0.8491	1.2281	0.822	1.5264
32	0.0664	0.855	1.201	0.8379	1.5478
33	0.0652	0.8626	1.1599	0.8602	1.5773
34	0.064	0.872	1.1045	0.889	1.615
35	0.0629	0.8825	1.0396	0.9222	1.6582
36	0.0618	0.8931	0.9743	0.9555	1.7017
37	0.0606	0.9026	0.918	0.9847	1.74
38	0.0596	0.9104	0.8755	1.0077	1.7703
39	0.0585	0.9165	0.8469	1.0244	1.7927
40	0.0574	0.925	0.7995	1.0496	1.8259
41	0.0564	0.9065	0.808	1.1066	1.793
42	0.0554	0.8973	0.8137	1.1396	1.7768
43	0.0544	0.8831	0.8209	1.1854	1.7517
44	0.0534	0.8638	0.8297	1.2448	1.7172
45	0.0525	0.8401	0.8398	1.3154	1.6749
46	0.0515	0.8147	0.8504	1.3906	1.6294
47	0.0506	0.7907	0.8607	1.4619	1.5866

48	0.0497	0.7709	0.8696	1.5227	1.5512
49	0.0488	0.7562	0.877	1.5701	1.5251
50	0.048	0.7463	0.883	1.6049	1.5078
51	0.0471	0.7268	0.8919	1.6649	1.473
52	0.0463	0.7287	0.8942	1.6692	1.4768
53	0.0454	0.7306	0.8965	1.6736	1.4807
54	0.0446	0.7325	0.8989	1.6779	1.4845
55	0.0433	0.7345	0.9012	1.6823	1.4884
56	0.0412	0.7364	0.9036	1.6867	1.4923
57	0.0366	0.7383	0.9059	1.6911	1.4962
58	0.027	0.7402	0.9083	1.6955	1.5001
59	0.0142	0.7422	0.9107	1.7	1.504
60	0.0053	0.7441	0.913	1.7044	1.508
61	0.0017	0.746	0.9154	1.7089	1.5119
62	5e-04	0.748	0.9178	1.7133	1.5159

Knots - WOMEN
33 41

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0.437
MAR	0	1	NA
CHI	3	4	0.032
LIV	0	1	NA

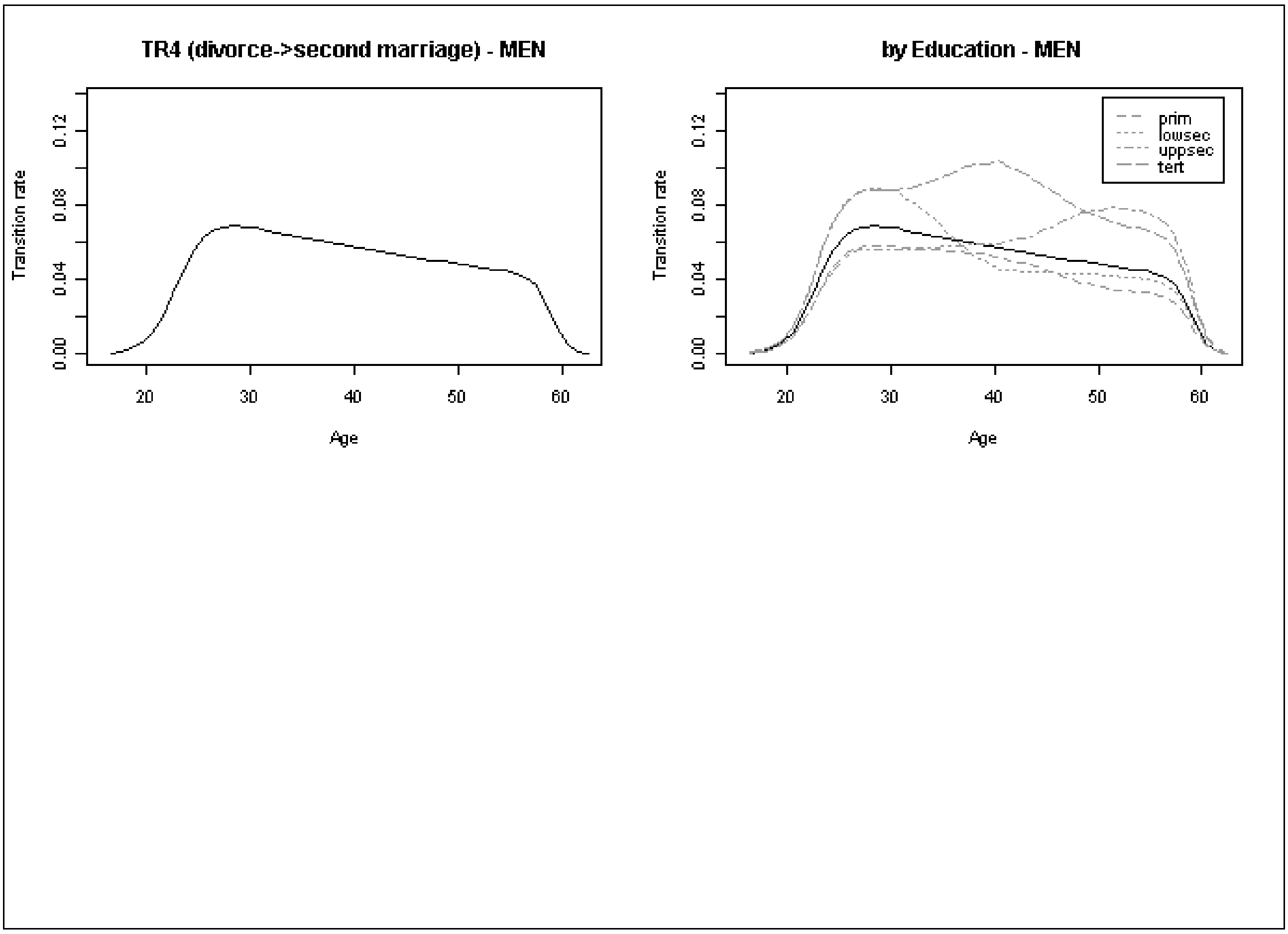
Number of events - WOMEN

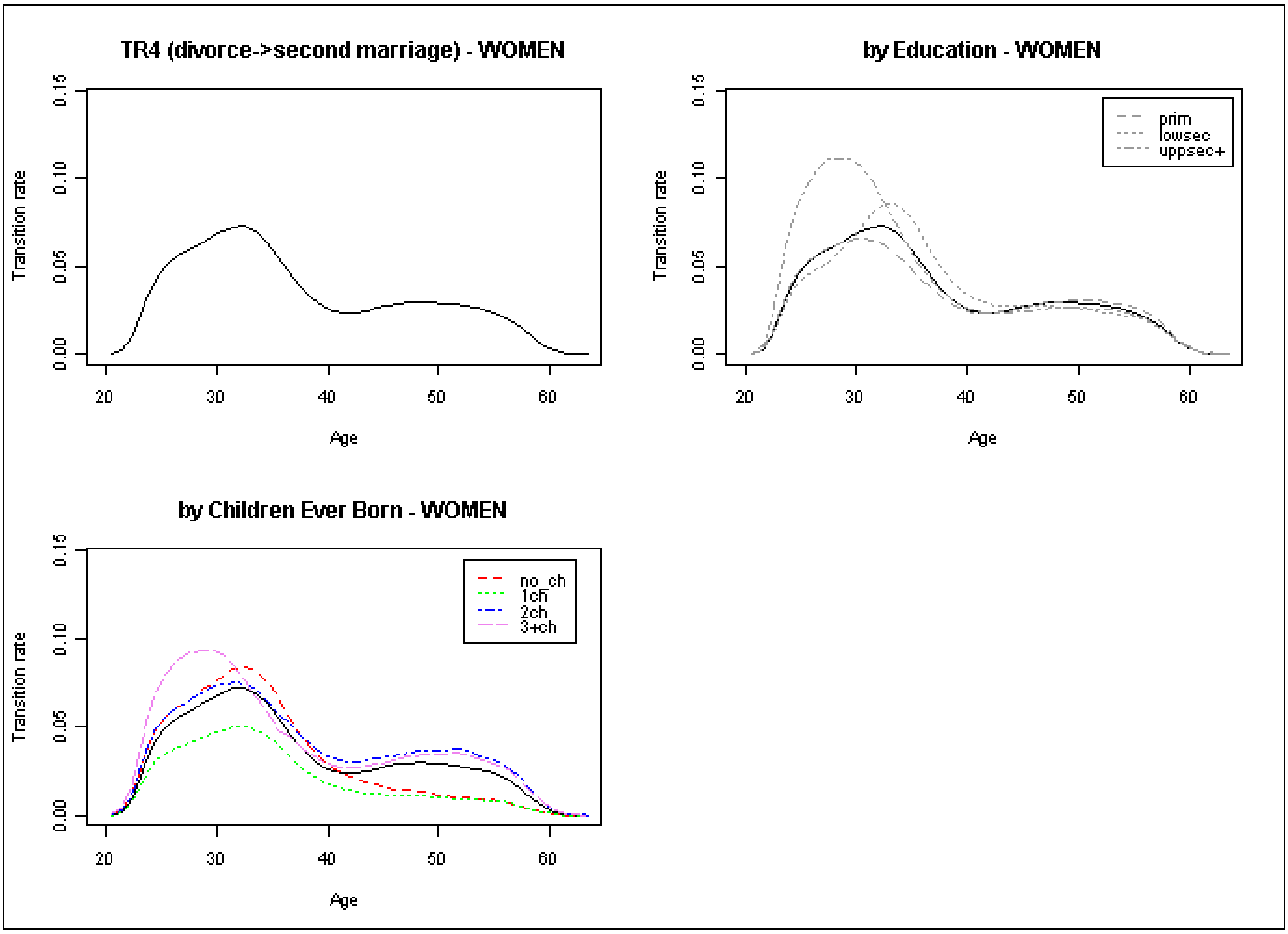
	int1	int2	int3	tot
prim	27	26	31	84
lowsec	15	24	12	51
uppsec	5	2	6	13
tert	2	6	4	12
no_ch	23	20	4	47
1ch	8	11	4	23
2ch	13	22	30	65
3+ch	4	7	15	26
tot	48	59	53	160

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+	no_ch	1ch	2ch	3+ch
20	4e-04	1.2012	1.0372	2.212	1.4381	0.9122	1.4532	2.0572
21	0.0022	1.1443	0.9882	2.1074	1.3383	0.8489	1.3524	1.9145
22	0.0106	1.0951	0.9456	2.0167	1.2526	0.7946	1.2658	1.792
23	0.0285	1.0575	0.9132	1.9475	1.1864	0.7526	1.1989	1.6973
24	0.0432	1.0333	0.8923	1.9029	1.1416	0.7242	1.1537	1.6332
25	0.0509	1.0209	0.8816	1.8801	1.1158	0.7078	1.1275	1.5962
26	0.0559	1.0156	0.877	1.8704	1.1029	0.6996	1.1145	1.5777
27	0.0595	1.0111	0.8731	1.8621	1.0948	0.6945	1.1064	1.5662
28	0.063	0.9948	0.9361	1.7653	1.1143	0.7	1.1023	1.4907
29	0.0665	0.9706	0.9773	1.6668	1.1201	0.6981	1.0889	1.4152
30	0.0699	0.9351	1.0373	1.5229	1.1292	0.6956	1.0698	1.3053
31	0.0724	0.8933	1.1091	1.3527	1.1416	0.6937	1.0485	1.1755
32	0.0728	0.8537	1.1751	1.1928	1.1545	0.6926	1.0294	1.0545
33	0.0701	0.8236	1.2232	1.0733	1.167	0.6934	1.0176	0.9659
34	0.064	0.8073	1.2571	1.0017	1.1829	0.6987	1.017	0.9161
35	0.0557	0.8024	1.319	0.9355	1.2204	0.7159	1.0323	0.8711
36	0.0467	0.8438	1.2995	0.9506	1.1798	0.7083	1.1256	0.9661
37	0.0385	0.8722	1.3133	0.9713	1.1821	0.7158	1.1757	1.0145
38	0.032	0.904	1.3223	0.992	1.1682	0.7155	1.2257	1.0644
39	0.0276	0.9331	1.3162	1.0055	1.1276	0.701	1.2648	1.1067
40	0.025	0.9543	1.2883	1.0065	1.0566	0.6696	1.2852	1.1341
41	0.0239	0.9656	1.2387	0.9938	0.961	0.6238	1.2849	1.144

42	0.024	0.9683	1.1738	0.9707	0.8532	0.57	1.2683	1.1394
43	0.025	0.9664	1.1034	0.9431	0.7469	0.516	1.2438	1.127
44	0.0264	0.9648	1.0374	0.9173	0.6527	0.4679	1.2207	1.1147
45	0.028	0.9676	0.9828	0.8981	0.5761	0.4294	1.2061	1.1087
46	0.0292	0.9771	0.9425	0.8881	0.5177	0.4011	1.2036	1.1125
47	0.0299	0.9932	0.9163	0.8869	0.4753	0.382	1.2128	1.126
48	0.03	1.0138	0.9014	0.8924	0.4455	0.3699	1.2303	1.1461
49	0.0297	1.0355	0.8939	0.9014	0.4244	0.3624	1.2507	1.1682
50	0.0291	1.055	0.8899	0.9105	0.4088	0.3572	1.2688	1.1874
51	0.0285	1.0912	0.861	0.9193	0.3636	0.342	1.3192	1.2412
52	0.0277	1.0963	0.865	0.9236	0.3627	0.3411	1.3158	1.238
53	0.0266	1.1	0.868	0.9267	0.3617	0.3402	1.3122	1.2346
54	0.0251	1.1048	0.8717	0.9307	0.3617	0.3402	1.3121	1.2345
55	0.023	1.1129	0.8781	0.9376	0.3636	0.342	1.3191	1.2411
56	0.0197	1.1255	0.8881	0.9482	0.3679	0.3461	1.3349	1.256
57	0.0151	1.1423	0.9013	0.9623	0.3746	0.3523	1.3591	1.2787
58	0.0097	1.1613	0.9163	0.9784	0.3828	0.3601	1.389	1.3068
59	0.0051	1.1803	0.9313	0.9943	0.3915	0.3683	1.4206	1.3366
60	0.0023	1.197	0.9444	1.0084	0.3997	0.376	1.4503	1.3645
61	9e-04	1.2103	0.955	1.0196	0.4069	0.3827	1.4762	1.3889
62	4e-04	1.2207	0.9632	1.0284	0.413	0.3884	1.4983	1.4097
63	1e-04	1.2297	0.9703	1.0359	0.4186	0.3937	1.5186	1.4288


TR4 (divorce->second marriage) - MEN
Transition rate
0.00
0.04
0.08
0.12
20
30
40
50
60
Age
by Education - MEN
prim
lowsec
uppsec
tert


TR4 (divorce->second marriage) - WOMEN
Transition rate
0.00
0.05
0.10
0.15
20
30
40
50
60
Age
by Education - WOMEN
prim
lowsec
uppsec+
by Children Ever Born - WOMEN
no_ch
1ch
2ch
3+ch

TR5 (death of spouse->2nd marriage) - Netherlands

Parameters
wl= 30 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 20 lft=TRUE   rgt=TRUE

Knots - MEN
NA NA

Covariates - MEN

1 NA

Number of events - MEN

1 NA

Baseline and relative risks - MEN

NA

Knots - WOMEN
NA NA

Covariates - WOMEN

1 NA

Number of events - WOMEN

1 NA

Baseline and relative risks - WOMEN

NA

TR6 (parental home->1st union) - Netherlands

Parameters
wl= 10 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
24 26

Covariates - MEN

	code	ncat	pvalue
EDU	3	3	0.377
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	28	33	36	97
lowsec	60	62	39	161
uppsec	8	15	9	32
tert	1	4	4	9
noch	97	113	89	299
1+ch	0	0	0	0
tot	97	113	89	299

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec+
15	0	1.0738	1.1747	0.5995
16	1e-04	1.037	1.1344	0.579
17	9e-04	1.006	1.1006	0.5617
18	0.0035	0.9856	1.0782	0.5503
19	0.0079	0.9792	1.0712	0.5467
20	0.0157	0.9879	1.0807	0.5516
21	0.0291	1.0028	1.0757	0.5888
22	0.0502	1.0221	1.0605	0.6488
23	0.0792	1.039	1.0252	0.7312
24	0.1127	1.0572	1.0038	0.7976
25	0.1432	1.0715	0.9921	0.8425
26	0.1613	1.0726	1.0197	0.8453
27	0.1612	1.0558	1.0474	0.8353
28	0.1434	1.0245	1.0778	0.8151
29	0.1148	0.9962	1.0922	0.7958
30	0.0841	0.975	1.0963	0.7809
31	0.0578	0.9672	1.0875	0.7746
32	0.0384	0.9644	1.0844	0.7724
33	0.0254	0.9662	1.0864	0.7739
34	0.0175	0.9709	1.0917	0.7776
35	0.0131	0.9762	1.0976	0.7818
36	0.0108	0.98	1.1019	0.7849
37	0.0102	0.9816	1.1037	0.7862
38	0.011	0.9812	1.1032	0.7858
39	0.0134	0.9803	1.1022	0.7851
40	0.0176	0.9807	1.1026	0.7854
41	0.024	0.9838	1.1062	0.788
42	0.0318	0.9902	1.1134	0.7931
43	0.0385	0.9991	1.1234	0.8002
44	0.0405	1.0085	1.134	0.8077
45	0.0359	1.0159	1.1422	0.8136
46	0.0267	1.0187	1.1454	0.8159
47	0.0169	1.0156	1.1419	0.8134
48	0.0096	1.0067	1.1319	0.8063

49	0.0052	0.9935	1.1171	0.7957
50	0.0029	0.9786	1.1004	0.7838
51	0.0017	0.9648	1.0848	0.7727
52	0.0012	0.954	1.0727	0.7641
53	9e-04	0.9472	1.065	0.7586
54	8e-04	0.9438	1.0612	0.7559
55	8e-04	0.9422	1.0594	0.7546
56	8e-04	0.9404	1.0573	0.7532
57	9e-04	0.9363	1.0527	0.7499
58	0.001	0.9287	1.0442	0.7438
59	0.0011	0.9177	1.0318	0.735
60	0.0012	0.9042	1.0166	0.7242
61	0.0013	0.8896	1.0002	0.7125

Knots - WOMEN
21 24

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

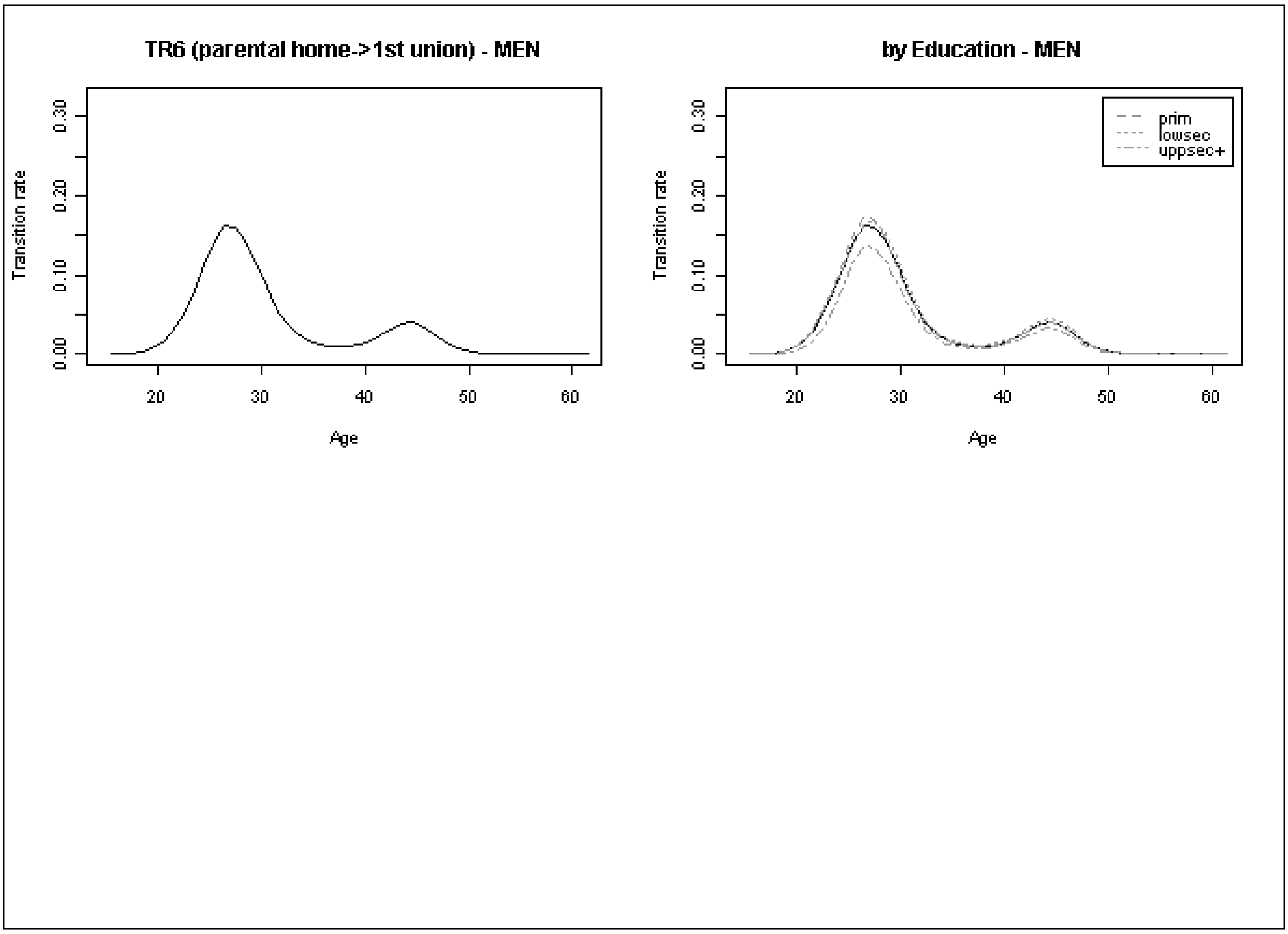
Number of events - WOMEN

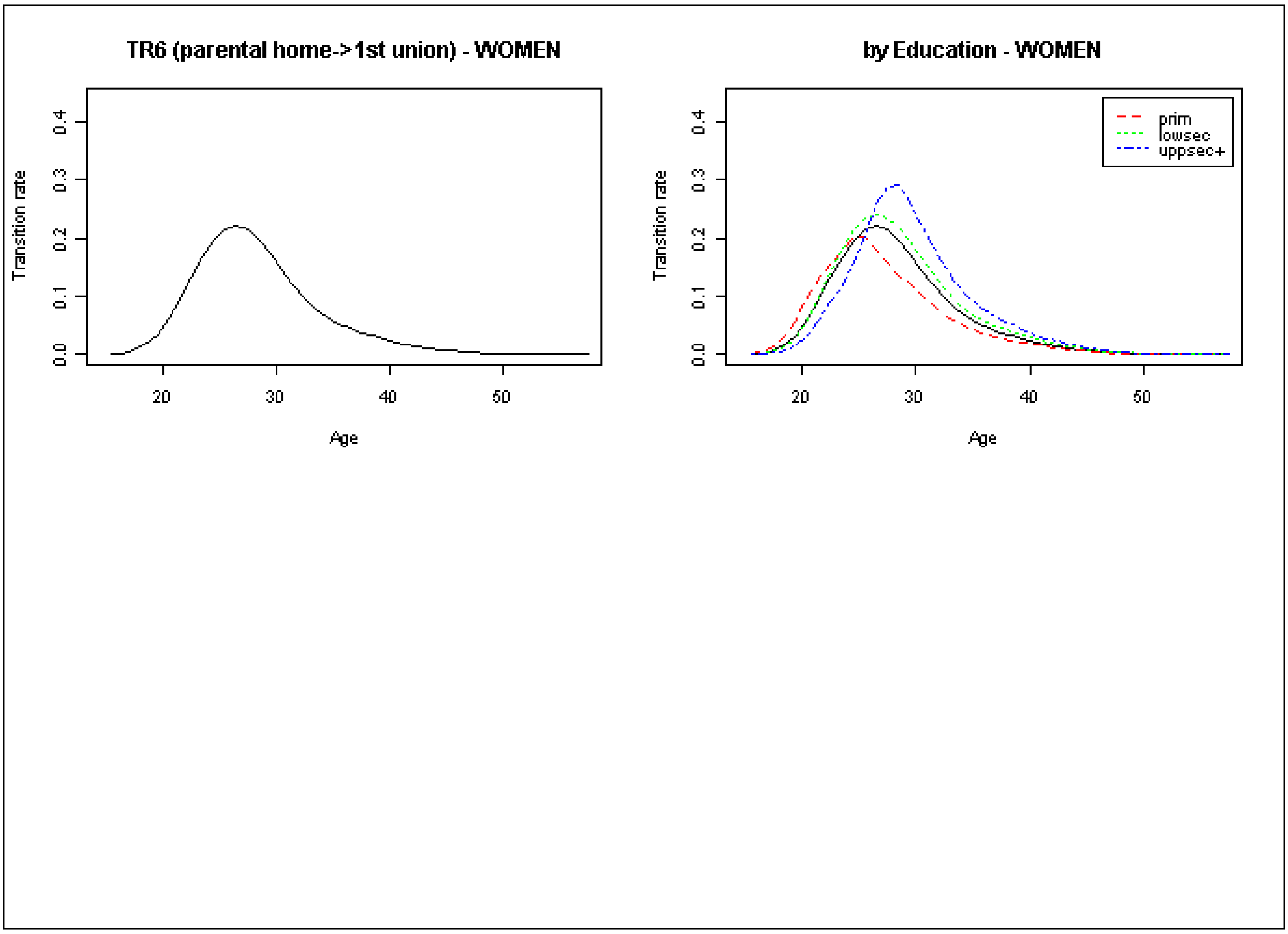
	int1	int2	int3	tot
prim	28	35	22	85
lowsec	38	97	49	184
uppsec	6	12	9	27
tert	1	12	11	24
noch	71	157	80	308
1+ch	2	0	11	13
tot	73	157	91	320

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+
15	1e-04	1.591	0.7481	0.4079
16	0.0019	1.6606	0.7808	0.4258
17	0.0081	1.7278	0.8125	0.443
18	0.0178	1.7865	0.8401	0.4581
19	0.0347	1.7261	0.886	0.4976
20	0.0606	1.5807	0.9412	0.5519
21	0.0947	1.35	1.0082	0.6227
22	0.1327	1.1828	1.0566	0.674
23	0.1686	1.0825	1.0909	0.7085
24	0.1971	1.034	1.092	0.8025
25	0.2146	0.9505	1.0912	0.9577
26	0.2198	0.8255	1.0868	1.1816
27	0.2129	0.7392	1.0927	1.3587
28	0.1958	0.6895	1.1056	1.4846
29	0.172	0.7034	1.128	1.5147
30	0.1454	0.7139	1.1448	1.5373
31	0.1188	0.7208	1.1558	1.552
32	0.0963	0.7248	1.1623	1.5607
33	0.0781	0.7274	1.1663	1.5662
34	0.064	0.7296	1.17	1.5711
35	0.0532	0.7323	1.1743	1.5769
36	0.0448	0.7353	1.1791	1.5833
37	0.0379	0.7379	1.1833	1.589
38	0.032	0.7394	1.1857	1.5921
39	0.0267	0.7393	1.1855	1.5919
40	0.0219	0.738	1.1834	1.5891

41	0.0177	0.7366	1.1811	1.586
42	0.014	0.7365	1.181	1.5859
43	0.011	0.7393	1.1855	1.5918
44	0.0084	0.7457	1.1958	1.6057
45	0.0064	0.7556	1.2117	1.6271
46	0.0047	0.7678	1.2312	1.6533
47	0.0034	0.7803	1.2512	1.6802
48	0.0023	0.7908	1.2681	1.7028
49	0.0015	0.7976	1.2789	1.7174
50	0.001	0.7999	1.2826	1.7223
51	6e-04	0.7983	1.2801	1.7189
52	4e-04	0.7943	1.2737	1.7103
53	2e-04	0.7898	1.2665	1.7007
54	1e-04	0.7864	1.2609	1.6932
55	1e-04	0.7846	1.2581	1.6895
56	0	0.7844	1.2579	1.6891
57	0	0.7851	1.2589	1.6905


TR6 (parental home->1st union) - MEN
Transition rate
Age
by Education - MEN
prim
lowsec
uppsec+
Transition rate
Age


TR6 (parental home->1st union) - WOMEN
Transition rate
Age
by Education - WOMEN
prim
lowsec
uppsec+
Transition rate
Age

TR7 (parental home->alone/others) - Netherlands

Parameters
wl= 5 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
20 24

Covariates - MEN

	code	ncat	pvalue
EDU	3	3	0.109
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	28	30	30	88
lowsec	52	63	34	149
uppsec	1	12	16	29
tert	2	1	1	4
noch	82	106	81	269
1+ch	0	0	0	0
tot	82	106	81	270

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec+
15	9e-04	0.6577	1.1315	0.4857
16	0.02	0.6924	1.1913	0.5113
17	0.0393	0.7304	1.2567	0.5394
18	0.0636	0.7731	1.2539	0.629
19	0.0879	0.8209	1.2003	0.7681
20	0.1026	0.8724	1.0797	0.9658
21	0.1039	0.9238	0.9955	1.1356
22	0.0967	0.969	0.9484	1.2642
23	0.0888	0.997	0.9733	1.3231
24	0.0855	1.0089	0.9833	1.3532
25	0.089	1.0017	0.9739	1.3642
26	0.0999	0.9796	0.9493	1.361
27	0.1166	0.9508	0.9179	1.3516
28	0.1332	0.9245	0.8891	1.3444
29	0.1407	0.9083	0.8706	1.3467
30	0.132	0.9066	0.8667	1.364
31	0.1095	0.9201	0.8781	1.3983
32	0.0829	0.9436	0.8978	1.4571
33	0.061	0.9776	0.9302	1.5096
34	0.0469	1.0104	0.9613	1.5601
35	0.0403	1.0341	0.9839	1.5967
36	0.0401	1.0433	0.9927	1.6109
37	0.046	1.0369	0.9866	1.6011
38	0.0584	1.0183	0.9689	1.5724
39	0.0756	0.9941	0.9458	1.535
40	0.0932	0.9713	0.9242	1.4998
41	0.1016	0.9556	0.9092	1.4755
42	0.0945	0.9499	0.9038	1.4667
43	0.0753	0.9541	0.9078	1.4733
44	0.0537	0.9656	0.9187	1.4909
45	0.0366	0.9798	0.9323	1.5129
46	0.0258	0.9919	0.9438	1.5316
47	0.0199	0.998	0.9496	1.5411
48	0.0173	0.997	0.9486	1.5395

49	0.0169	0.9902	0.9421	1.5289
50	0.0178	0.9812	0.9336	1.5151
51	0.0191	0.9745	0.9272	1.5048
52	0.0197	0.9736	0.9264	1.5034
53	0.0186	0.9803	0.9328	1.5137
54	0.0157	0.9942	0.946	1.5352
55	0.0118	1.0128	0.9636	1.5638
56	0.008	1.0321	0.9821	1.5937
57	0.005	1.0482	0.9974	1.6186
58	0.0031	1.0581	1.0068	1.6339
59	0.0018	1.0612	1.0097	1.6386
60	0.0011	1.0589	1.0075	1.635
61	6e-04	1.0539	1.0028	1.6274

Knots - WOMEN
19 21

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

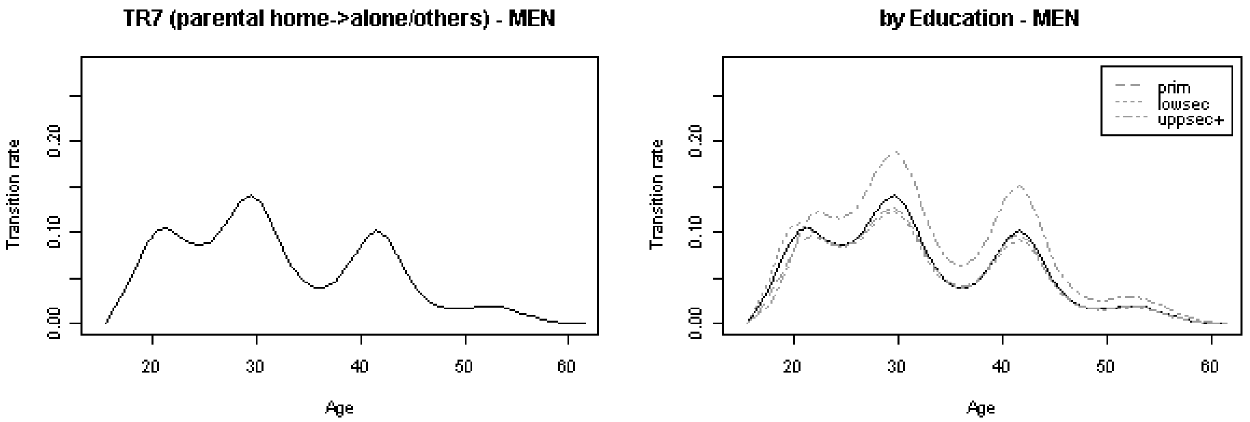
Number of events - WOMEN

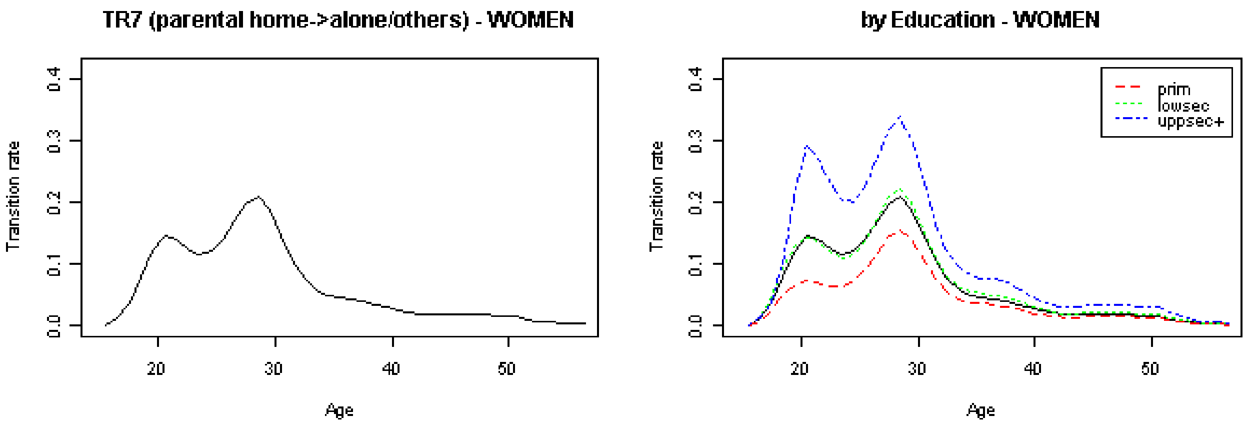
	int1	int2	int3	tot
prim	12	11	14	37
lowsec	33	70	40	143
uppsec	3	17	16	36
tert	0	5	2	7
noch	49	104	69	222
1+ch	0	0	3	3
tot	49	104	72	224

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+
15	4e-04	0.564	1.0531	0.8829
16	0.0132	0.6131	1.1449	0.9599
17	0.0373	0.6585	1.2296	1.0309
18	0.0782	0.6466	1.2193	1.2843
19	0.1227	0.5471	1.0643	1.823
20	0.1454	0.4985	0.9853	2.0137
21	0.141	0.5084	0.9638	1.9131
22	0.1262	0.5192	0.9453	1.8202
23	0.1172	0.5491	0.9413	1.7249
24	0.1209	0.5964	0.9566	1.6478
25	0.1393	0.6498	0.988	1.6095
26	0.1692	0.6973	1.0258	1.6094
27	0.1987	0.7411	1.0564	1.5944
28	0.2083	0.7511	1.0706	1.6159
29	0.1876	0.748	1.0662	1.6092
30	0.1461	0.7375	1.0513	1.5867
31	0.1056	0.7289	1.039	1.5681
32	0.0762	0.7302	1.0409	1.571
33	0.0584	0.7454	1.0625	1.6036
34	0.0491	0.7721	1.1006	1.6612
35	0.0445	0.8025	1.1439	1.7264
36	0.0415	0.8245	1.1752	1.7738
37	0.0381	0.8277	1.1798	1.7807
38	0.0332	0.8089	1.1531	1.7404
39	0.0274	0.7747	1.1043	1.6668
40	0.0222	0.7376	1.0514	1.5868

41	0.0183	0.7101	1.0122	1.5277
42	0.0158	0.7007	0.9988	1.5074
43	0.0143	0.7121	1.0151	1.532
44	0.0133	0.7417	1.0572	1.5957
45	0.012	0.7819	1.1145	1.6821
46	0.0101	0.8222	1.1719	1.7688
50	0.008	0.8643	1.232	1.8595
51	0.0054	0.8364	1.1922	1.7994
52	0.0037	0.7977	1.1371	1.7162
53	0.0027	0.755	1.0762	1.6243
54	0.002	0.7133	1.0167	1.5345
55	0.0016	0.6745	0.9615	1.4512
56	0.0014	0.6387	0.9104	1.3741


TR7 (parental home->alone/others) - MEN
Transition rate
0.00
0.10
0.20
20
30
40
50
60
Age
by Education - MEN
prim
lowsec
uppsec+
Transition rate
0.00
0.10
0.20
20
30
40
50
60
Age


TR7 (parental home->alone/others) - WOMEN
Transition rate
0.0
0.1
0.2
0.3
0.4
20
30
40
50
Age
by Education - WOMEN
prim
lowsec
uppsec+
Transition rate
0.0
0.1
0.2
0.3
0.4
20
30
40
50
Age

TR8 (alone/with others->1st union) - Netherlands

Parameters
wl= 5 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
27 31

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0.049
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	24	21	29	74
lowsec	41	54	37	132
uppsec	16	45	23	84
tert	8	25	24	57
noch	89	145	113	347
1+ch	0	0	0	0
tot	89	145	113	347

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert
16	1e-04	1.0278	0.8441	0.5738	0.457
17	4e-04	1.0702	0.8789	0.5974	0.4758
18	0.002	1.1136	0.9146	0.6217	0.4951
19	0.008	1.1575	0.9506	0.6462	0.5146
20	0.0193	1.2006	0.986	0.6702	0.5338
21	0.0334	1.242	1.02	0.6934	0.5522
22	0.0504	1.2807	1.0518	0.715	0.5694
23	0.0721	1.3161	1.0808	0.7347	0.5852
24	0.0986	1.2872	1.08	0.8138	0.6153
25	0.1298	1.2516	1.0749	0.8942	0.6447
26	0.1636	1.1749	1.0503	1.0111	0.6827
27	0.1969	1.075	1.0145	1.1475	0.7251
28	0.2259	0.9882	0.9838	1.2678	0.7627
29	0.247	0.9349	0.9675	1.3522	0.7905
30	0.2579	0.8801	0.9502	1.4369	0.8182
31	0.2578	0.8912	0.947	1.4461	0.8487
32	0.2477	0.902	0.9454	1.4559	0.876
33	0.2299	0.9124	0.9362	1.4609	0.9127
34	0.207	0.9221	0.9205	1.4614	0.9563
35	0.1817	0.9308	0.9031	1.4599	0.9994
36	0.1563	0.9378	0.8894	1.4589	1.0341
37	0.1324	0.943	0.8807	1.459	1.0576
38	0.1109	0.9464	0.8678	1.4548	1.0827
39	0.0923	0.9476	0.8689	1.4566	1.084
40	0.076	0.9472	0.8686	1.4561	1.0836
41	0.0629	0.9457	0.8672	1.4537	1.0819
42	0.0522	0.9434	0.8651	1.4502	1.0792
43	0.0435	0.9409	0.8628	1.4463	1.0764
44	0.0364	0.9386	0.8607	1.4429	1.0738
45	0.0305	0.9372	0.8594	1.4406	1.0722
46	0.0256	0.9369	0.8591	1.4402	1.0718
47	0.0215	0.9381	0.8602	1.442	1.0732
48	0.0178	0.9409	0.8628	1.4463	1.0764
49	0.0145	0.9454	0.8669	1.4533	1.0816

50	0.0115	0.9516	0.8726	1.4628	1.0887
51	0.0088	0.9593	0.8797	1.4747	1.0975
52	0.0065	0.9683	0.888	1.4886	1.1078
53	0.0046	0.9784	0.8972	1.504	1.1193
54	0.0032	0.9892	0.9071	1.5206	1.1316
55	0.0021	1.0003	0.9173	1.5377	1.1444
56	0.0014	1.0116	0.9276	1.5551	1.1573
57	9e-04	1.0228	0.9379	1.5722	1.1701
58	6e-04	1.0336	0.9478	1.5889	1.1825
59	4e-04	1.0442	0.9575	1.6052	1.1946
60	2e-04	1.0545	0.967	1.621	1.2064
61	1e-04	1.0647	0.9763	1.6366	1.218
62	1e-04	1.0748	0.9856	1.6522	1.2296

Knots - WOMEN
25 29

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0.044
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

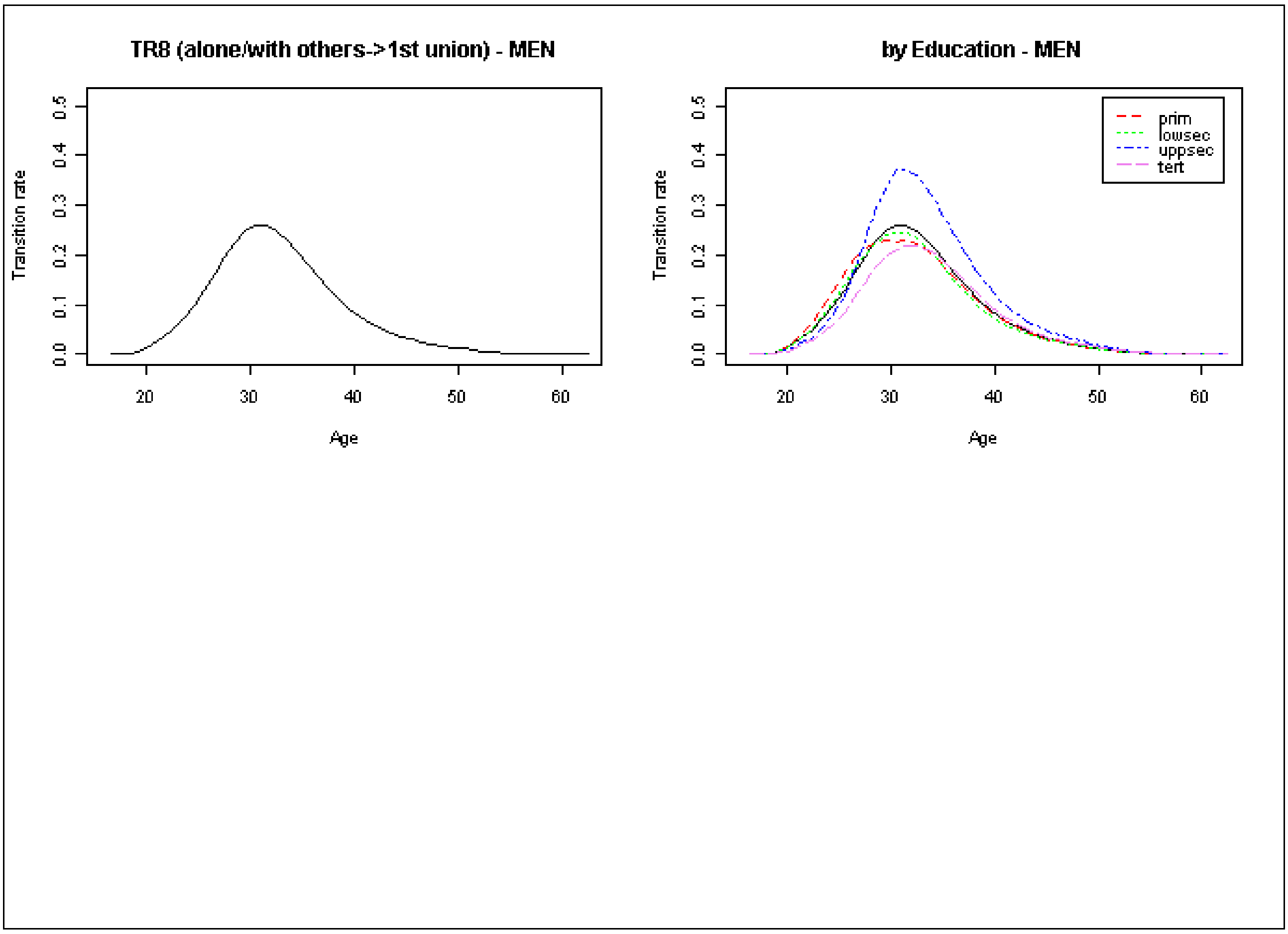
Number of events - WOMEN

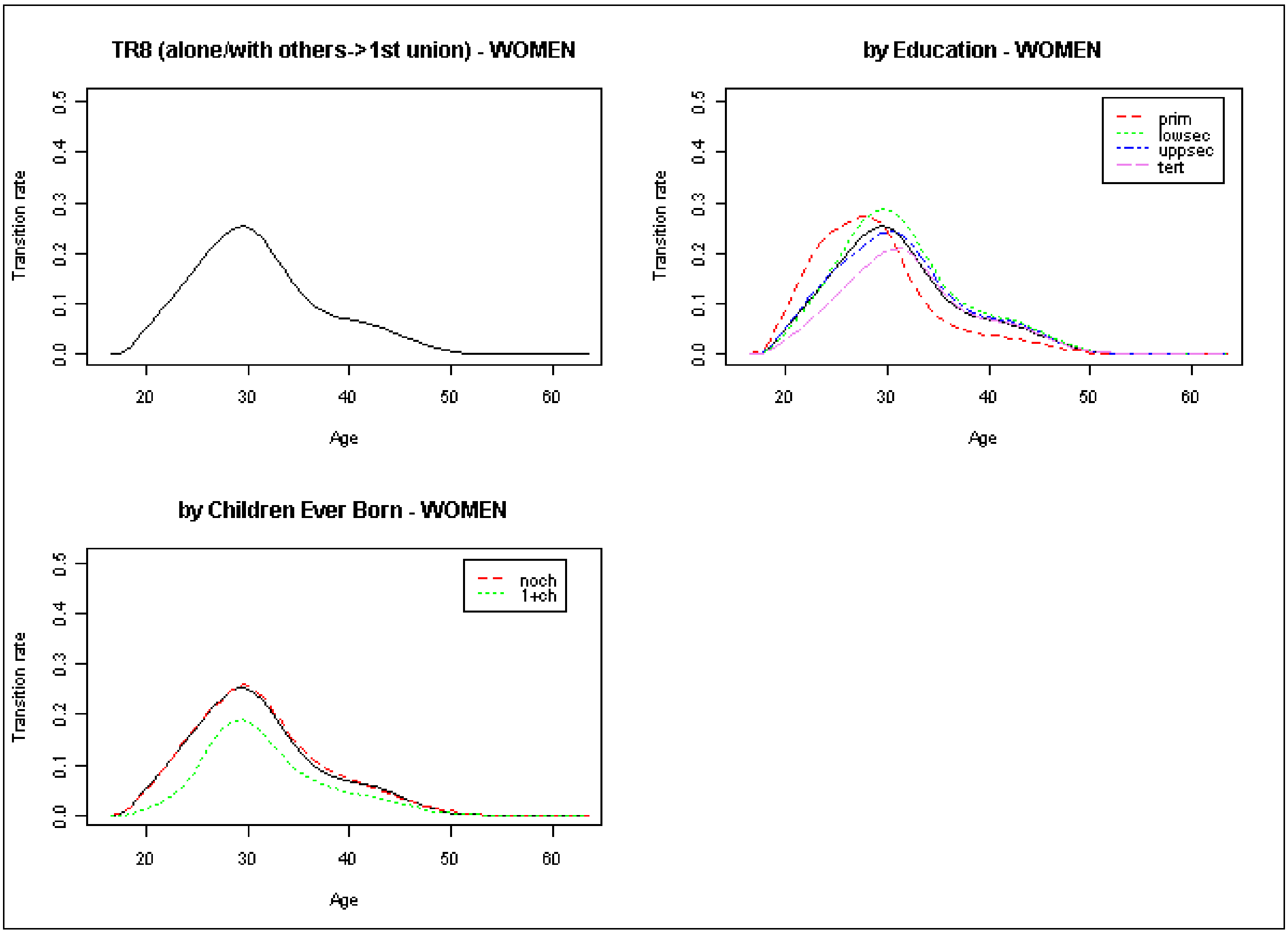
	int1	int2	int3	tot
prim	18	22	14	54
lowsec	48	69	42	159
uppsec	30	34	21	85
tert	7	16	20	43
noch	101	131	88	320
1+ch	2	10	9	21
tot	104	141	97	342

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert
16	3e-04	1.446	0.7394	0.8617	0.486
17	0.0026	1.5279	0.7812	0.9105	0.5135
18	0.0164	1.6093	0.8229	0.959	0.5409
19	0.0419	1.6832	0.8606	1.003	0.5657
20	0.0651	1.7418	0.8906	1.0379	0.5854
21	0.0884	1.7795	0.9099	1.0604	0.598
22	0.1126	1.727	0.9511	1.0556	0.6213
23	0.1377	1.6376	0.9903	1.0353	0.6424
24	0.1629	1.4909	1.0437	0.9978	0.6704
25	0.1877	1.3417	1.0913	0.9571	0.6948
26	0.2114	1.2405	1.1153	0.9263	0.7064
27	0.2324	1.1615	1.1333	0.9019	0.715
28	0.2476	1.0886	1.1327	0.9203	0.7477
29	0.2535	1.0207	1.1372	0.9429	0.7839
30	0.2473	0.9206	1.1502	0.9831	0.8442
31	0.2288	0.8042	1.1675	1.0321	0.9168
32	0.2014	0.705	1.1824	1.074	0.9787
33	0.1704	0.6405	1.1907	1.0997	1.0174
34	0.1409	0.5754	1.196	1.1225	1.0532
35	0.1163	0.5727	1.1903	1.1171	1.0482
36	0.0977	0.5691	1.1829	1.1102	1.0417
37	0.0846	0.5653	1.175	1.1028	1.0347
38	0.0755	0.562	1.1681	1.0963	1.0286
39	0.07	0.5596	1.163	1.0915	1.0242
40	0.0661	0.5583	1.1604	1.089	1.0218
41	0.0624	0.5581	1.16	1.0887	1.0215

42	0.0577	0.5589	1.1616	1.0902	1.0229
43	0.0513	0.5603	1.1646	1.093	1.0256
44	0.0433	0.5623	1.1688	1.0969	1.0292
45	0.0345	0.5648	1.174	1.1018	1.0338
46	0.0259	0.5678	1.1802	1.1077	1.0393
47	0.0184	0.5715	1.1879	1.1149	1.0461
48	0.0125	0.576	1.1972	1.1236	1.0542
49	0.0081	0.5812	1.208	1.1338	1.0638
50	0.0051	0.587	1.2201	1.1451	1.0744
51	0.0031	0.5931	1.2327	1.1569	1.0855
52	0.0018	0.5989	1.2449	1.1683	1.0962
53	0.001	0.6042	1.2559	1.1786	1.1059
54	5e-04	0.6086	1.265	1.1872	1.114
55	3e-04	0.6121	1.2722	1.194	1.1203
56	1e-04	0.6148	1.2778	1.1992	1.1252
57	1e-04	0.6171	1.2826	1.2037	1.1294
58	0	0.6194	1.2874	1.2083	1.1337
59	0	0.6222	1.2932	1.2137	1.1388
60	0	0.6256	1.3003	1.2203	1.145
61	0	0.6297	1.3087	1.2283	1.1525
62	0	0.6342	1.3183	1.2372	1.1609
63	0	0.6391	1.3283	1.2467	1.1697


TR8 (alone/with others->1st union) - MEN
by Education - MEN
Transition rate
Age
prim
lowsec
uppsec
tert


TR8 (alone/with others->1st union) - WOMEN
by Education - WOMEN
by Children Ever Born - WOMEN
Transition rate
Age
prim
lowsec
uppsec
tert
noch
1+ch

TR9 (1st union->disruption) - Netherlands

Parameters
wl= 5 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
32 42

Covariates - MEN

	code	ncat	pvalue
EDU	3	3	0.042
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	14	19	12	45
lowsec	18	23	21	62
uppsec	5	5	5	15
tert	2	5	2	9
no_marr	24	2	0	26
1st_mar	16	48	41	105
2nd mar	0	0	0	0
div/wid	0	2	0	2
no_ch	39	52	41	132
1ch	0	0	0	0
2ch	0	0	0	0
3+ch	0	0	0	0
tot	39	52	41	132

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec+
18	0.0012	1.28	1.0903	0.8127
19	0.0031	1.2058	1.0271	0.7656
20	0.0074	1.1434	0.974	0.726
21	0.0137	1.0997	0.9368	0.6982
22	0.0172	1.079	0.9191	0.6851
23	0.0172	1.0818	0.9215	0.6869
24	0.0166	1.1049	0.9412	0.7015
25	0.0166	1.1412	0.9721	0.7246
26	0.0167	1.1809	1.0059	0.7498
27	0.0167	1.2341	1.0458	0.7524
28	0.0161	1.2617	1.0665	0.7539
29	0.0149	1.274	1.0731	0.7402
30	0.0132	1.2734	1.068	0.7131
31	0.0114	1.2663	1.0566	0.6779
32	0.01	1.2596	1.0452	0.6412
33	0.009	1.2588	1.0389	0.609
34	0.0086	1.2664	1.0403	0.5847
35	0.0087	1.2824	1.0495	0.5694
36	0.0092	1.3039	1.0641	0.5616
37	0.0102	1.3263	1.0801	0.5588
38	0.0113	1.3574	1.101	0.5466
39	0.0125	1.3303	1.1384	0.5503
40	0.0133	1.3183	1.1465	0.5498
41	0.0135	1.2973	1.1513	0.5467
42	0.013	1.2706	1.1561	0.5424
43	0.012	1.2418	1.1641	0.5385
44	0.0107	1.2138	1.1782	0.5363
45	0.0093	1.1877	1.1991	0.5361

46	0.0081	1.1633	1.2258	0.5376
47	0.007	1.1392	1.2552	0.54
48	0.0061	1.1142	1.2839	0.5419
49	0.0055	1.0882	1.309	0.5428
50	0.0051	1.0624	1.3297	0.5426
51	0.005	1.0389	1.347	0.542
52	0.005	1.0204	1.3638	0.5424
53	0.0053	1.009	1.3832	0.5448
54	0.0057	1.0052	1.4069	0.5498
55	0.0063	1.0075	1.4337	0.5569
56	0.0069	0.9877	1.4848	0.5654
57	0.0075	0.9962	1.4976	0.5703
58	0.0079	0.9959	1.4972	0.5701
59	0.0077	0.9832	1.478	0.5628
60	0.0065	0.9572	1.4389	0.5479
61	0.0034	0.9203	1.3835	0.5268
62	7e-04	0.8772	1.3188	0.5022
63	1e-04	0.8328	1.252	0.4767

Knots - WOMEN
32 43

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0.011
MAR	0	1	NA
CHI	2	3	0.189
LIV	0	1	NA

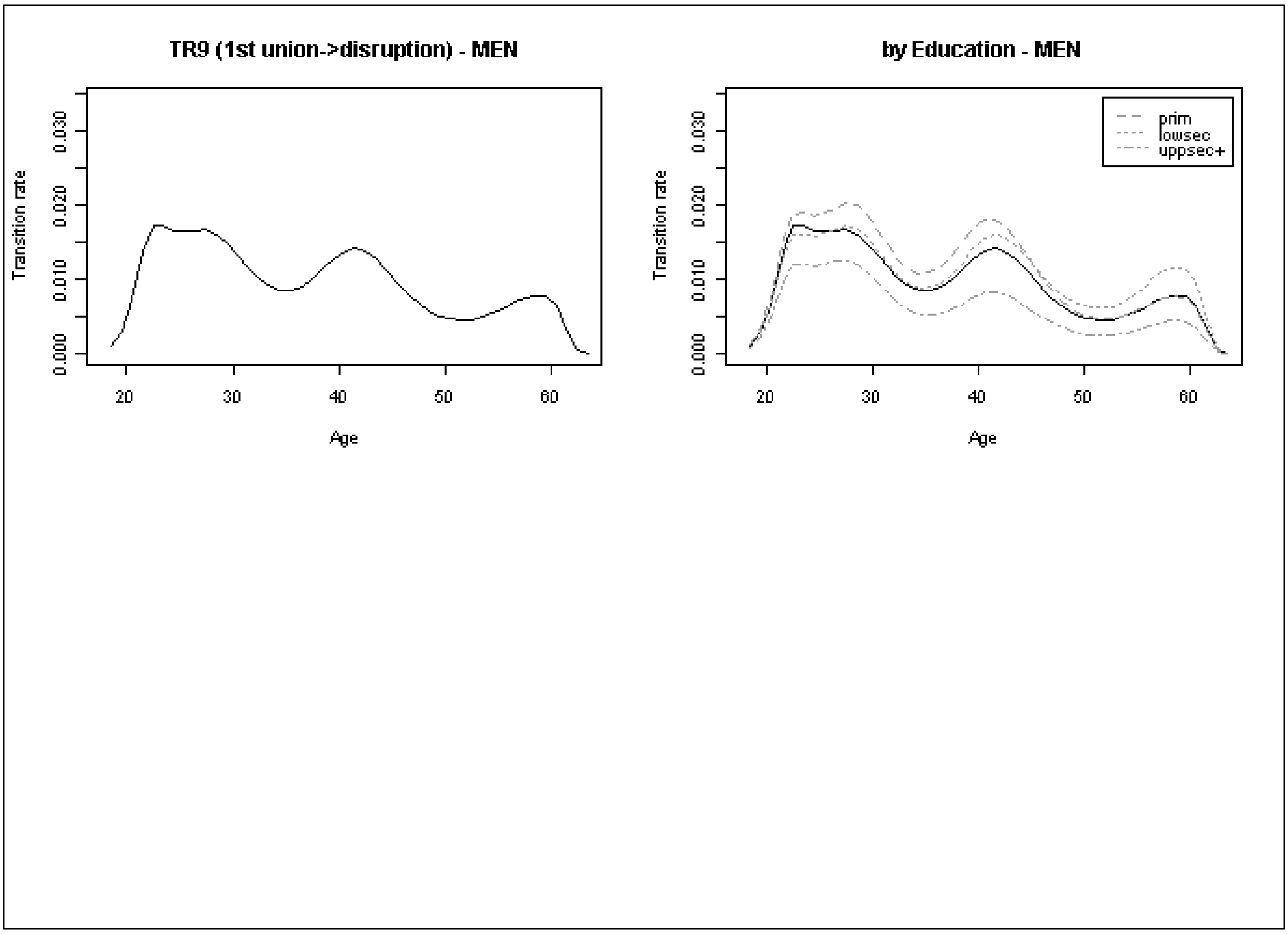
Number of events - WOMEN

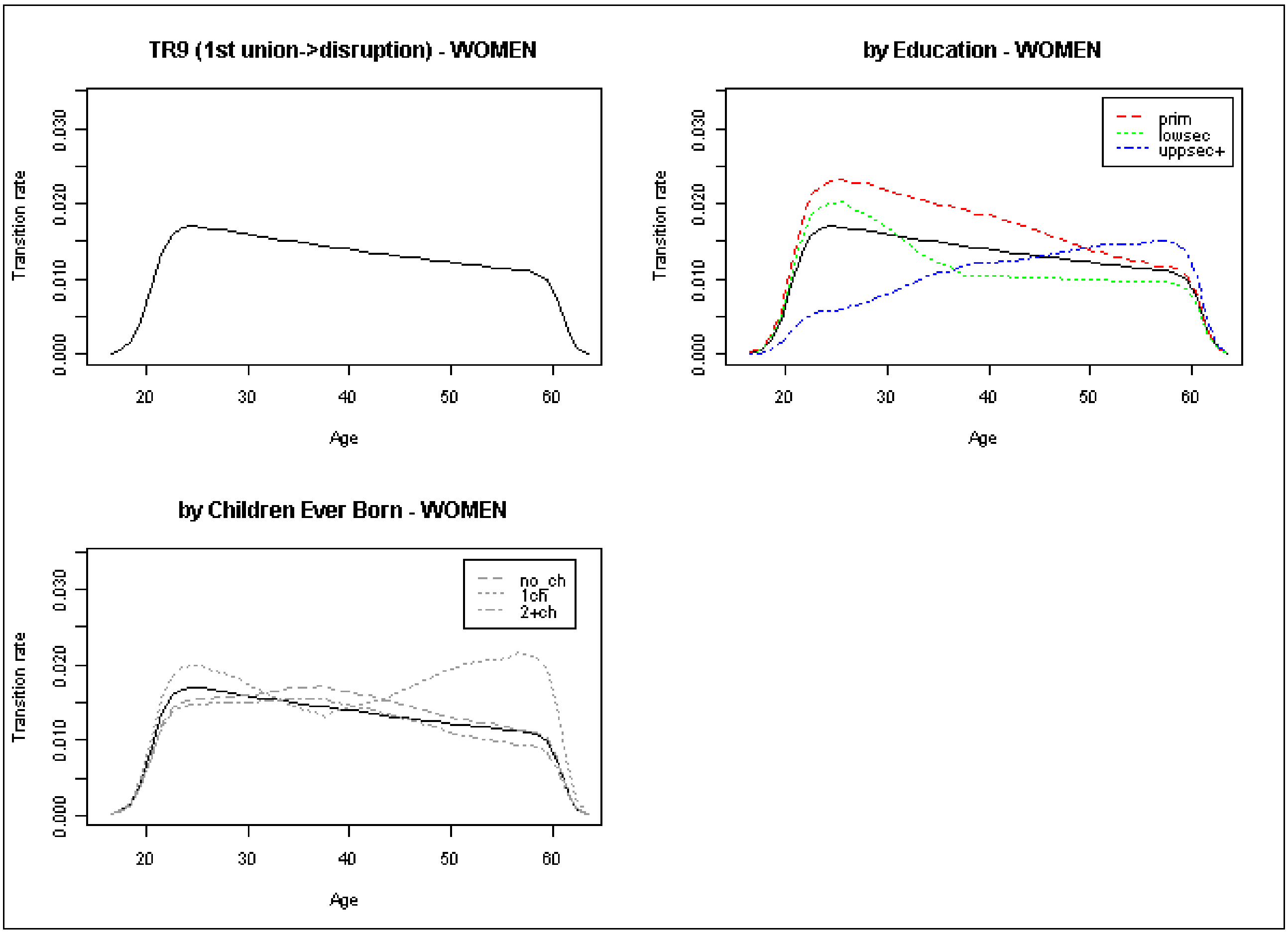
	int1	int2	int3	tot
prim	20	30	31	81
lowsec	33	25	15	73
uppsec	3	8	8	19
tert	2	7	3	12
no_marr	21	3	0	24
1st_mar	36	68	57	161
2nd mar	0	0	0	0
div/wid	0	0	0	0
no_ch	38	15	6	59
1ch	11	12	14	37
2ch	8	34	22	64
3+ch	0	9	15	24
tot	57	71	57	185

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+	no_ch	1ch	2+ch
16	2e-04	1.3652	1.0457	0.3263	0.8864	1.0636	0.64
17	7e-04	1.3785	1.0559	0.3295	0.8944	1.0732	0.6458
18	0.0018	1.3919	1.0661	0.3327	0.9024	1.0829	0.6516
19	0.0046	1.4054	1.0765	0.3359	0.9106	1.0926	0.6575
20	0.0091	1.4191	1.087	0.3392	0.9188	1.1025	0.6634
21	0.0135	1.4329	1.0975	0.3425	0.927	1.1124	0.6694
22	0.016	1.4468	1.1082	0.3458	0.9354	1.1224	0.6754
23	0.0168	1.4608	1.1189	0.3491	0.9438	1.1326	0.6815
24	0.017	1.4748	1.1296	0.3525	0.9523	1.1428	0.6876
25	0.017	1.4889	1.1404	0.3559	0.9609	1.1531	0.6938
26	0.0167	1.4717	1.1152	0.3906	0.9641	1.1362	0.7276
27	0.0165	1.4698	1.1077	0.4099	0.97	1.1328	0.748
28	0.0163	1.4616	1.0929	0.4356	0.9749	1.124	0.7739
29	0.0161	1.4461	1.0698	0.4683	0.9787	1.1091	0.8062
30	0.0158	1.424	1.039	0.5077	0.9813	1.0886	0.8444

31	0.0156	1.3974	1.0032	0.5514	0.9833	1.0643	0.8864
32	0.0154	1.37	0.9665	0.5958	0.9852	1.0395	0.9292
33	0.0152	1.3456	0.9333	0.637	0.9877	1.0174	0.9693
34	0.015	1.3268	0.9065	0.6724	0.9913	1.0004	1.0045
35	0.0148	1.3145	0.8873	0.7011	0.9962	0.9892	1.0341
36	0.0146	1.3081	0.875	0.7236	1.0022	0.9833	1.0583
37	0.0144	1.284	0.8423	0.7638	1.0051	0.9621	1.0982
38	0.0142	1.2607	0.8419	0.8073	1.0046	1.0334	1.074
39	0.014	1.2607	0.8463	0.8241	1.0109	1.0607	1.0739
40	0.0138	1.258	0.8501	0.8436	1.0166	1.0927	1.0713
41	0.0136	1.2525	0.8532	0.8663	1.0215	1.1303	1.0658
42	0.0134	1.2438	0.8556	0.8923	1.0256	1.1739	1.0572
43	0.0132	1.2318	0.8573	0.9219	1.0288	1.2238	1.0453
44	0.013	1.2166	0.8583	0.9549	1.0312	1.2797	1.0302
45	0.0129	1.1988	0.8587	0.9908	1.0329	1.3409	1.0124
46	0.0127	1.1791	0.8587	1.0287	1.0341	1.4061	0.9925
47	0.0125	1.1584	0.8584	1.0676	1.0351	1.4734	0.9717
48	0.0123	1.1379	0.8582	1.1062	1.0362	1.5407	0.951
49	0.0122	1.1185	0.8582	1.1435	1.0376	1.6061	0.9315
50	0.012	1.1011	0.8586	1.1785	1.0397	1.668	0.914
51	0.0118	1.0863	0.8595	1.2105	1.0426	1.7252	0.8992
52	0.0117	1.0744	0.861	1.2394	1.0464	1.7773	0.8874
53	0.0115	1.0653	0.8632	1.265	1.0512	1.8242	0.8785
54	0.0114	1.059	0.8659	1.2877	1.0567	1.8662	0.8725
55	0.0112	1.0551	0.8692	1.3078	1.0631	1.9037	0.8691
56	0.011	1.0245	0.867	1.3585	1.0614	1.9945	0.8368
57	0.0109	1.031	0.8725	1.367	1.071	2.0125	0.8443
58	0.0106	1.0375	0.8781	1.3757	1.0806	2.0306	0.8519
59	0.0098	1.0441	0.8836	1.3845	1.0904	2.0489	0.8596
60	0.0073	1.0507	0.8893	1.3933	1.1002	2.0674	0.8673
61	0.0031	1.0574	0.8949	1.4021	1.1101	2.086	0.8752
62	8e-04	1.0642	0.9006	1.4111	1.1201	2.1048	0.8831
63	2e-04	1.071	0.9064	1.4201	1.1302	2.1238	0.891


TR9 (1st union->disruption) - MEN
Transition rate
Age
by Education - MEN
prim
lowsec
uppsec+
Transition rate
Age


TR9 (1st union->disruption) - WOMEN
Transition rate
Age
by Education - WOMEN
prim
lowsec
uppsec+
Transition rate
Age
by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
Age

TR10 (Alone/others->2nd union) - Netherlands

Parameters
wl= 20 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
31 40

Covariates - MEN

	code	ncat	pvalue
EDU	4	4	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

Number of events - MEN

	int1	int2	int3	tot
prim	25	30	23	78
lowsec	36	33	24	93
uppsec	10	10	16	36
tert	6	15	15	36
no_marr	62	20	1	83
1st_mar	0	1	0	1
2nd mar	0	0	0	0
div/wid	15	67	76	158
no_ch	78	88	77	243
1ch	0	0	0	0
2ch	0	0	0	0
3+ch	0	0	0	0
tot	78	88	77	243

Baseline and relative risks - MEN

age	baselin	prim	lowsec	uppsec	tert
16	0.0016	1.0697	2.8055	2.1426	1.2883
17	0.0055	0.9974	2.6159	1.9978	1.2012
18	0.0178	0.9293	2.4374	1.8614	1.1192
19	0.0516	0.8649	2.2684	1.7324	1.0416
20	0.1185	0.8045	2.1099	1.6114	0.9689
21	0.2009	0.7493	1.9651	1.5008	0.9024
22	0.2665	0.701	1.8385	1.4041	0.8442
23	0.3072	0.6614	1.7346	1.3247	0.7965
24	0.3267	0.6317	1.6568	1.2653	0.7608
25	0.3292	0.6126	1.6067	1.227	0.7378
26	0.3134	0.61	1.5327	1.1591	0.8239
27	0.2855	0.6145	1.5024	1.1288	0.8852
28	0.2503	0.6286	1.4759	1.0978	0.9864
29	0.213	0.6501	1.445	1.0593	1.1279
30	0.1778	0.6755	1.4061	1.0116	1.2985
31	0.1473	0.7008	1.3625	0.9596	1.4751
32	0.1222	0.7223	1.3206	0.9109	1.6313
33	0.1025	0.7378	1.2854	0.8711	1.7508
34	0.0874	0.7473	1.2582	0.8415	1.8313
35	0.0761	0.7565	1.2039	0.7867	1.9463
36	0.0677	0.7564	1.1573	0.8344	1.9675
37	0.0618	0.7577	1.1402	0.8556	1.9797
38	0.0579	0.7609	1.1195	0.8855	2
39	0.0555	0.7666	1.0949	0.9262	2.0303
40	0.0545	0.7745	1.0655	0.9777	2.0701
41	0.0546	0.7837	1.0305	1.0383	2.1166
42	0.0554	0.7929	0.9908	1.104	2.1655
43	0.0565	0.8011	0.9484	1.1695	2.2122

44	0.0575	0.8075	0.9065	1.2298	2.2527
45	0.0578	0.812	0.8681	1.2813	2.2853
46	0.057	0.8149	0.8355	1.3229	2.3102
47	0.0548	0.8171	0.8096	1.3553	2.3293
48	0.0516	0.8192	0.7905	1.3806	2.3451
49	0.0476	0.8208	0.74	1.437	2.3739
50	0.0434	0.8242	0.7431	1.443	2.3837
51	0.0396	0.8278	0.7463	1.4493	2.3941
52	0.0361	0.8312	0.7494	1.4552	2.4039
53	0.0333	0.8338	0.7517	1.4597	2.4114
54	0.0308	0.8352	0.753	1.4622	2.4155
55	0.0278	0.8355	0.7532	1.4626	2.4162
56	0.0233	0.8347	0.7526	1.4614	2.4141
57	0.0168	0.8336	0.7515	1.4594	2.4108
58	0.01	0.8326	0.7506	1.4576	2.4079
59	0.0051	0.8321	0.7502	1.4567	2.4064
60	0.0024	0.8322	0.7503	1.457	2.4068
61	0.001	0.8329	0.7509	1.4582	2.4089
62	4e-04	0.8339	0.7518	1.4599	2.4117

Knots - WOMEN
29 36

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0.025
MAR	0	1	NA
CHI	2	3	0
LIV	0	1	NA

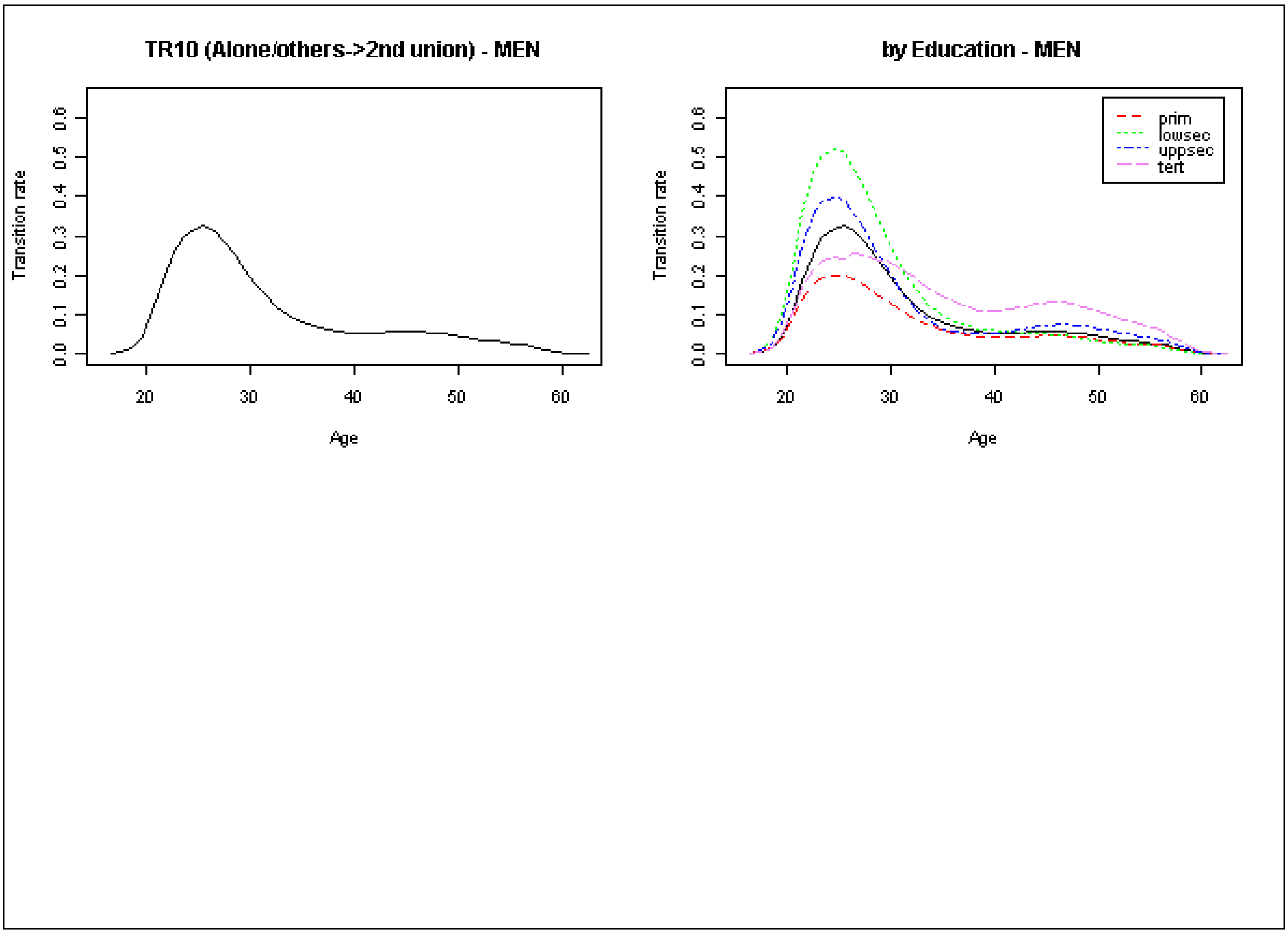
Number of events - WOMEN

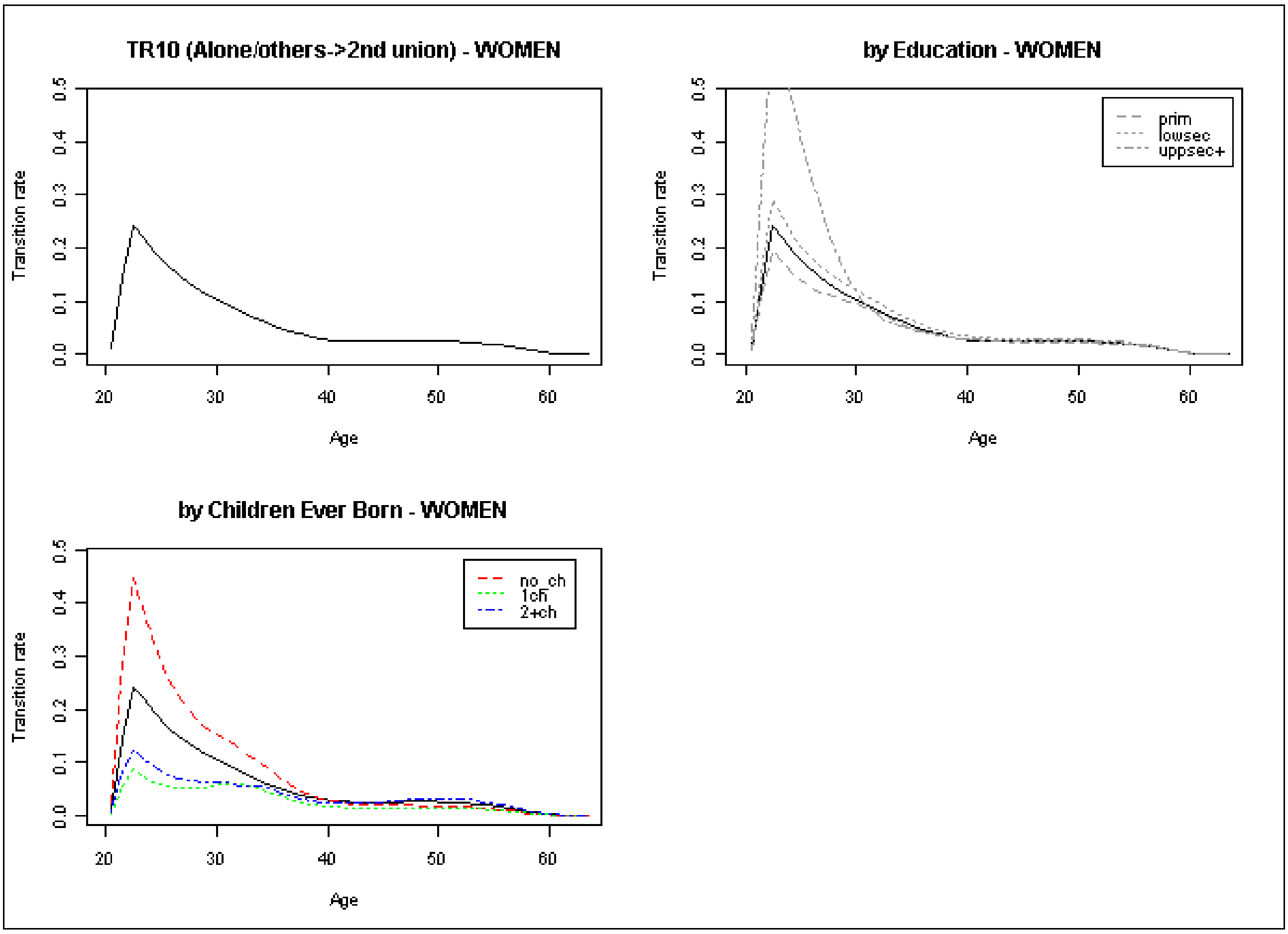
	int1	int2	int3	tot
prim	33	40	42	115
lowsec	32	43	19	94
uppsec	11	4	9	24
tert	1	6	7	14
no_marr	54	19	2	75
1st_mar	0	0	0	0
2nd mar	0	0	0	0
div/wid	23	74	75	172
no_ch	61	51	7	119
1ch	6	18	8	32
2ch	7	18	44	69
3+ch	2	6	18	26
tot	77	93	77	247

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+	no_ch	1ch	2+ch
20	0.0118	0.8104	1.2392	2.811	2.049	0.4094	0.5844
21	0.1479	0.7954	1.2162	2.7589	1.9218	0.3839	0.5481
22	0.2474	0.7799	1.1925	2.705	1.8071	0.361	0.5154
23	0.2224	0.7629	1.1664	2.646	1.7109	0.3418	0.4879
24	0.194	0.797	1.1809	2.4272	1.579	0.3456	0.4693
25	0.1702	0.8098	1.1754	2.2473	1.5002	0.3504	0.4598
26	0.1506	0.834	1.1768	2.014	1.439	0.37	0.4624
27	0.1343	0.8662	1.183	1.7406	1.3966	0.4067	0.4788
28	0.1207	0.8972	1.1873	1.4633	1.3787	0.4604	0.5098
29	0.1088	0.917	1.1831	1.224	1.3927	0.5273	0.5542
30	0.0982	0.9229	1.1699	1.0458	1.4402	0.6013	0.6084
31	0.0881	0.9202	1.1536	0.9282	1.5098	0.6735	0.665
32	0.0784	0.9392	1.1606	0.7965	1.5275	0.7486	0.7151
33	0.0689	0.9232	1.1346	0.8157	1.5234	0.7758	0.8166

34	0.0598	0.9281	1.1386	0.8301	1.5128	0.7797	0.844
35	0.0515	0.9448	1.1567	0.8581	1.4475	0.7576	0.8484
36	0.0443	0.9698	1.1841	0.8974	1.3438	0.717	0.8361
37	0.0383	0.998	1.2146	0.9442	1.2246	0.6691	0.8177
38	0.0336	1.0233	1.2406	0.9933	1.1102	0.6243	0.804
39	0.0301	1.0402	1.2555	1.0388	1.0137	0.5896	0.8034
40	0.0276	1.0448	1.2549	1.0759	0.9398	0.5679	0.8205
41	0.026	1.0361	1.2379	1.101	0.8874	0.5593	0.8562
42	0.0252	1.0159	1.2073	1.1136	0.8519	0.5612	0.9081
43	0.0248	0.9879	1.1678	1.1151	0.8271	0.5698	0.9701
44	0.0248	0.9564	1.125	1.1088	0.8073	0.5808	1.0343
45	0.0249	0.9253	1.0836	1.0981	0.7881	0.5904	1.0926
46	0.0251	0.8974	1.0468	1.0863	0.7676	0.5963	1.1394
47	0.0252	0.874	1.0162	1.0756	0.7463	0.5982	1.1733
48	0.0252	0.8557	0.9923	1.0671	0.7261	0.5976	1.1966
49	0.025	0.8425	0.9749	1.0618	0.709	0.5963	1.2136
50	0.0245	0.8276	0.9506	1.0795	0.6539	0.593	1.272
51	0.0238	0.8265	0.9494	1.0781	0.6547	0.5937	1.2736
52	0.0229	0.8309	0.9544	1.0839	0.6545	0.5936	1.2732
53	0.0214	0.8417	0.9668	1.0979	0.6507	0.5901	1.2658
54	0.0197	0.8596	0.9874	1.1213	0.6404	0.5808	1.2458
55	0.0175	0.8854	1.017	1.1549	0.6222	0.5643	1.2103
56	0.0146	0.9189	1.0555	1.1986	0.5963	0.5408	1.16
57	0.0109	0.9596	1.1022	1.2517	0.5653	0.5126	1.0996
58	0.0068	1.0061	1.1557	1.3124	0.5323	0.4827	1.0354
59	0.0035	1.0569	1.2141	1.3787	0.5004	0.4538	0.9735
60	0.0015	1.1105	1.2756	1.4486	0.4718	0.4279	0.9177
61	6e-04	1.1658	1.3391	1.5207	0.4469	0.4053	0.8693
62	2e-04	1.2225	1.4043	1.5948	0.4252	0.3856	0.827
63	1e-04	1.2813	1.4718	1.6714	0.4054	0.3677	0.7887


TR10 (Alone/others->2nd union) - MEN
Transition rate
Age
by Education - MEN
prim
lowsec
uppsec
tert
Transition rate
Age


TR10 (Alone/others->2nd union) - WOMEN
Transition rate
Age
by Education - WOMEN
prim
lowsec
uppsec+
Transition rate
Age
by Children Ever Born - WOMEN
no_ch
1ch
2+ch
Transition rate
Age

TR11 (childless->1st birth) - Netherlands

Parameters
wl= 5 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
NA NA

Covariates - MEN

1	NA

Number of events - MEN

1	NA

Baseline and relative risks - MEN

NA

Knots - WOMEN
28 32

Covariates - WOMEN

	code	ncat	pvalue
EDU	4	4	0
MAR	1	2	0
CHI	0	1	NA
LIV	0	1	NA

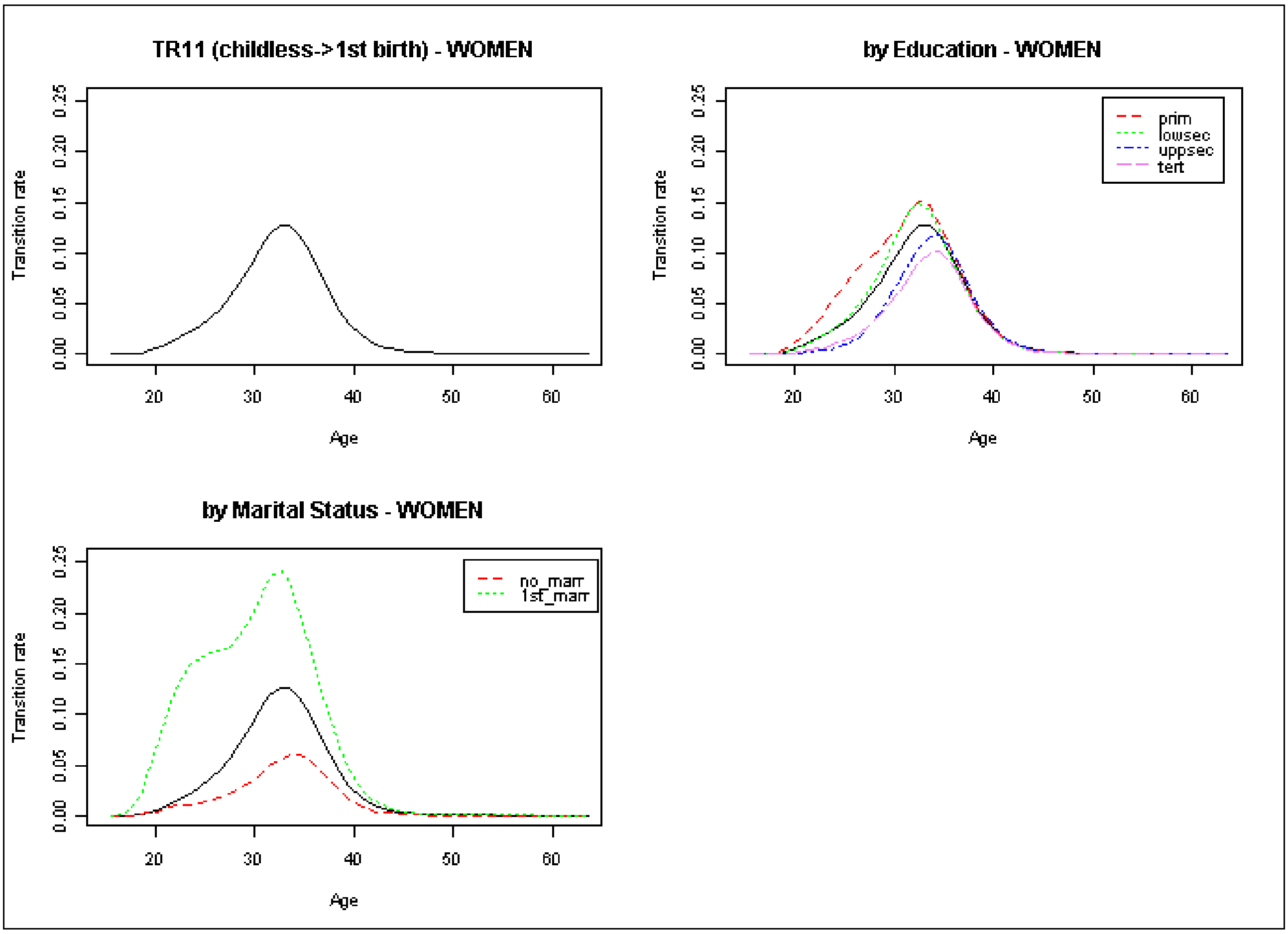
Number of events - WOMEN

	int1	int2	int3	tot
prim	35	28	23	86
lowsec	56	93	42	191
uppsec	6	23	22	51
tert	4	16	17	37
no_marr	40	41	34	115
1st_mar	60	114	63	237
2nd mar	0	0	2	2
div/wid	0	6	6	12
par_hom	2	0	0	2
no_part	97	154	98	349
1st_un	2	6	6	14
tot	101	161	105	366

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec	tert	no_marr	1st_mar
15	0	1.0387	0.491	0.1074	0.1817	0.9429	12.4668
16	1e-04	1.2065	0.5703	0.1248	0.211	0.9488	12.5446
17	4e-04	1.3937	0.6588	0.1441	0.2438	0.9462	12.5097
18	0.0016	1.59	0.7516	0.1644	0.2781	0.9249	12.2288
19	0.0043	1.7804	0.8416	0.1841	0.3114	0.8776	11.6031
20	0.0077	1.9497	0.9216	0.2016	0.341	0.8037	10.6262
21	0.0118	2.0874	0.9867	0.2158	0.3651	0.7106	9.3957
22	0.0166	2.1919	1.0361	0.2267	0.3834	0.6105	8.0721
23	0.022	2.2704	1.0732	0.2348	0.3971	0.5154	6.8145
24	0.0284	2.1822	1.0881	0.2778	0.4172	0.4619	5.4958
25	0.036	2.0837	1.1018	0.3232	0.4379	0.417	4.4675
26	0.0454	1.8934	1.1101	0.394	0.4663	0.3953	3.6059
27	0.057	1.6517	1.1191	0.4826	0.5015	0.3885	2.9372
28	0.0711	1.4449	1.1378	0.5685	0.5385	0.3864	2.4878

29	0.0872	1.3243	1.1696	0.6379	0.5732	0.3852	2.2334
30	0.1038	1.1909	1.2009	0.7111	0.6092	0.3933	2.052
31	0.1181	1.2034	1.2031	0.7709	0.6608	0.41	1.9823
32	0.1266	1.1979	1.1839	0.8373	0.7181	0.4364	1.9195
33	0.1265	1.1575	1.1213	0.9237	0.7928	0.4782	1.8195
34	0.1172	1.1066	1.0476	1.0069	0.8648	0.5215	1.7167
35	0.1007	1.0732	0.999	1.0629	0.9133	0.5518	1.6525
36	0.0806	1.0442	0.9577	1.1065	0.951	0.5746	1.5949
37	0.0607	1.049	0.962	1.1116	0.9554	0.5746	1.5947
38	0.0431	1.0499	0.9628	1.1125	0.9562	0.5689	1.579
39	0.0297	1.0455	0.9589	1.1079	0.9523	0.5568	1.5455
40	0.02	1.0342	0.9485	1.0959	0.9419	0.5381	1.4935
41	0.0133	1.0145	0.9305	1.0751	0.924	0.5131	1.4241
42	0.0088	0.9865	0.9048	1.0454	0.8985	0.4833	1.3415
43	0.006	0.9521	0.8732	1.0089	0.8671	0.4511	1.252
44	0.0041	0.9148	0.839	0.9694	0.8332	0.4193	1.1637
45	0.0029	0.8794	0.8065	0.9319	0.8009	0.3907	1.0843
46	0.0022	0.8505	0.78	0.9012	0.7746	0.3677	1.0205
47	0.0017	0.8319	0.763	0.8816	0.7577	0.352	0.9771
48	0.0014	0.8265	0.758	0.8758	0.7528	0.3447	0.9568
49	0.0012	0.8354	0.7662	0.8853	0.7609	0.3463	0.9613
50	0.001	0.8584	0.7872	0.9096	0.7818	0.3569	0.9904
51	9e-04	0.8935	0.8195	0.9469	0.8138	0.3758	1.0432
52	8e-04	0.9374	0.8597	0.9934	0.8538	0.4022	1.1164
53	8e-04	0.985	0.9034	1.0438	0.8971	0.4342	1.2051
54	7e-04	1.0306	0.9452	1.0921	0.9386	0.4691	1.3019
55	6e-04	1.0685	0.9799	1.1322	0.9731	0.5036	1.3976
56	6e-04	1.0943	1.0036	1.1596	0.9967	0.5344	1.4831
57	5e-04	1.1061	1.0144	1.1721	1.0074	0.5587	1.5507
58	4e-04	1.1041	1.0126	1.17	1.0056	0.5751	1.5961
59	3e-04	1.0905	1.0001	1.1556	0.9932	0.5832	1.6188
60	3e-04	1.0685	0.9799	1.1323	0.9732	0.5843	1.6218
61	2e-04	1.0415	0.9551	1.1036	0.9485	0.5802	1.6103
62	2e-04	1.0122	0.9283	1.0726	0.9219	0.573	1.5902
63	1e-04	0.9826	0.9011	1.0412	0.8949	0.5646	1.5669


TR11 (childless->1st birth) - WOMEN
Transition rate
0.00
0.05
0.10
0.15
0.20
0.25
20
30
40
50
60
Age
by Education - WOMEN
prim
lowsec
uppsec
tert
by Marital Status - WOMEN
no_marr
1st_marr

TR12 (1st birth->2nd birth) - Netherlands

Parameters
wl= 5 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
NA NA

Covariates - MEN

1	NA

Number of events - MEN

1	NA

Baseline and relative risks - MEN

NA

Knots - WOMEN
31 34

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0.006
MAR	1	2	0
CHI	0	1	NA
LIV	0	1	NA

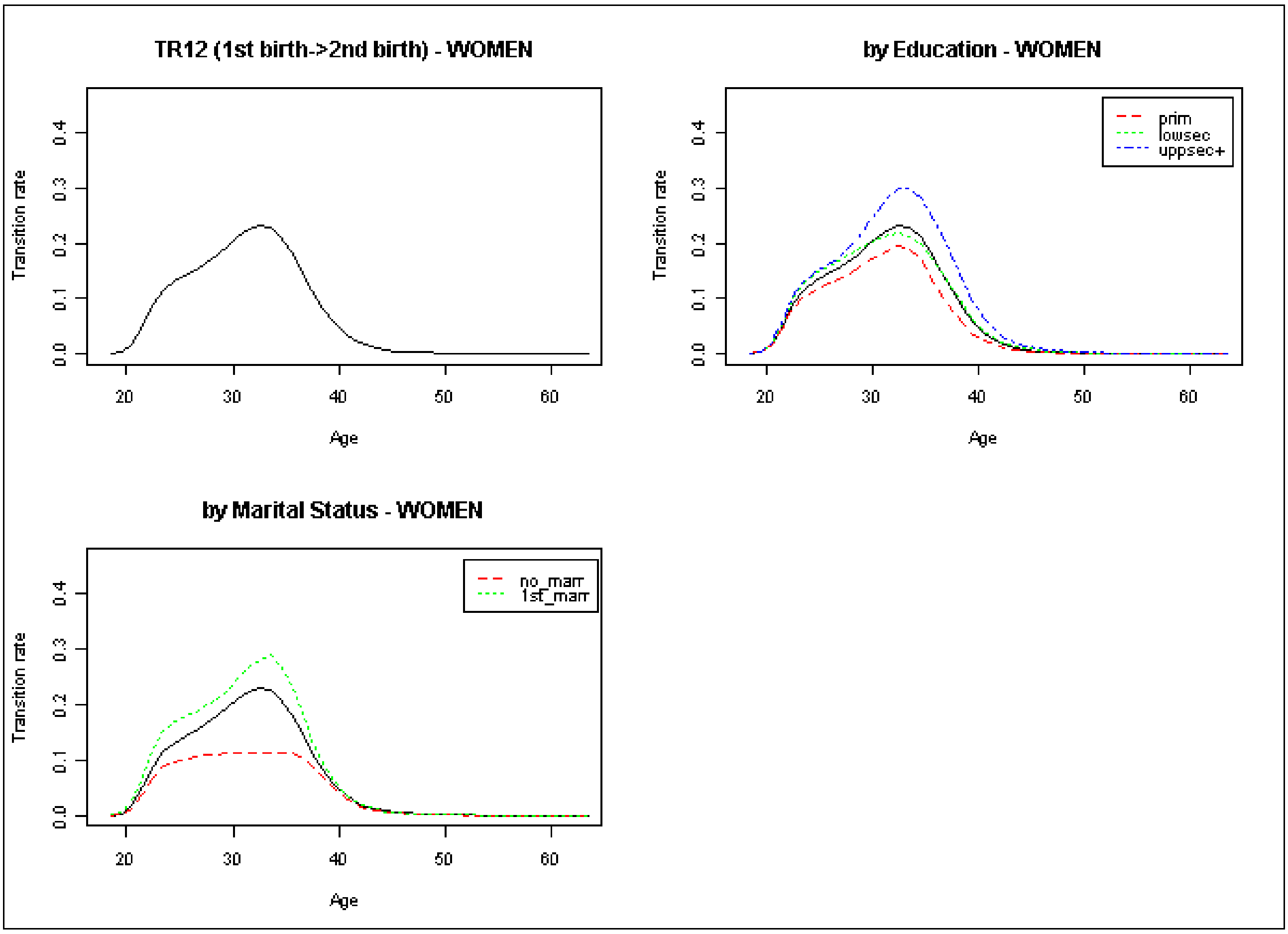
Number of events - WOMEN

	int1	int2	int3	tot
prim	27	27	15	69
lowsec	45	53	26	124
uppsec	3	19	19	41
tert	5	13	7	25
no_marr	17	17	15	49
1st_mar	62	90	45	197
2nd mar	0	2	3	5
div/wid	0	4	3	7
par_hom	0	0	0	0
no_part	79	109	61	249
1st_un	0	2	5	7
tot	79	112	66	257

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+	no_marr	1st_mar
18	0.001	0.9484	1.1891	1.2141	0.8229	1.4384
19	0.0046	0.938	1.1761	1.2007	0.8117	1.4188
20	0.0182	0.9275	1.1629	1.1873	0.8008	1.3997
21	0.0518	0.9167	1.1493	1.1735	0.7901	1.381
22	0.0914	0.9058	1.1357	1.1595	0.7787	1.3612
23	0.1163	0.8951	1.1223	1.1458	0.7654	1.3379
24	0.1307	0.8853	1.11	1.1333	0.7484	1.3082
25	0.1425	0.8772	1.0998	1.1229	0.7267	1.2703
26	0.1535	0.8711	1.0922	1.1151	0.7003	1.2241
27	0.1661	0.8643	1.0698	1.1352	0.6566	1.2023
28	0.1806	0.8587	1.0454	1.164	0.6106	1.1848
29	0.1966	0.8523	1.0105	1.2114	0.5605	1.1892
30	0.2125	0.846	0.9758	1.2588	0.5186	1.2032
31	0.2255	0.841	0.9523	1.288	0.4946	1.2163

32	0.2316	0.8355	0.932	1.3088	0.4834	1.2451
33	0.2271	0.7966	0.9495	1.3485	0.5147	1.2309
34	0.2101	0.7486	0.9719	1.3986	0.5607	1.2226
35	0.1819	0.6779	1.0097	1.4804	0.6295	1.1915
36	0.147	0.6095	1.0498	1.5654	0.7023	1.1539
37	0.1113	0.5672	1.0796	1.6262	0.7559	1.1324
38	0.0798	0.5364	1.1096	1.6841	0.7934	1.1035
39	0.0549	0.5432	1.1236	1.7053	0.7922	1.1018
40	0.0366	0.5523	1.1424	1.7339	0.7781	1.0822
41	0.0243	0.5628	1.1642	1.767	0.7556	1.0509
42	0.0163	0.5737	1.1868	1.8012	0.7303	1.0157
43	0.0111	0.5839	1.2078	1.8331	0.7075	0.984
44	0.0078	0.5925	1.2255	1.86	0.6906	0.9606
45	0.0056	0.5991	1.2392	1.8808	0.6812	0.9474
46	0.0041	0.6039	1.2492	1.8959	0.6786	0.9439
47	0.0031	0.6075	1.2566	1.9073	0.6812	0.9475
48	0.0024	0.6107	1.2633	1.9174	0.6865	0.9549
49	0.0019	0.6143	1.2708	1.9287	0.6923	0.9628
50	0.0015	0.6188	1.2801	1.9428	0.6971	0.9696
51	0.0011	0.6244	1.2915	1.9602	0.701	0.975
52	8e-04	0.6307	1.3047	1.9803	0.7052	0.9809
53	6e-04	0.6376	1.3188	2.0016	0.7117	0.9899
54	5e-04	0.6443	1.3328	2.0228	0.7223	1.0046
55	3e-04	0.6506	1.3458	2.0426	0.7383	1.0269
56	2e-04	0.6564	1.3578	2.0608	0.7599	1.0569
57	2e-04	0.6618	1.369	2.0778	0.7858	1.093
58	1e-04	0.6672	1.3802	2.0949	0.8141	1.1323
59	1e-04	0.6731	1.3924	2.1133	0.8423	1.1715
60	1e-04	0.6797	1.4061	2.1341	0.8683	1.2077
61	0	0.6872	1.4216	2.1576	0.8912	1.2396
62	0	0.6954	1.4385	2.1833	0.9116	1.2678
63	0	0.704	1.4563	2.2103	0.9307	1.2945


TR12 (1st birth->2nd birth) - WOMEN
by Education - WOMEN
prim
lowsec
uppsec+
by Marital Status - WOMEN
no_marr
1st_marr
Transition rate
Age
0.0
0.1
0.2
0.3
0.4
20
30
40
50
60

TR13 (2birth->3th birth) - Netherlands

Parameters
wl= 10 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
NA NA

Covariates - MEN

1 NA

Number of events - MEN

1 NA

Baseline and relative risks - MEN

NA

Knots - WOMEN
31 34

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

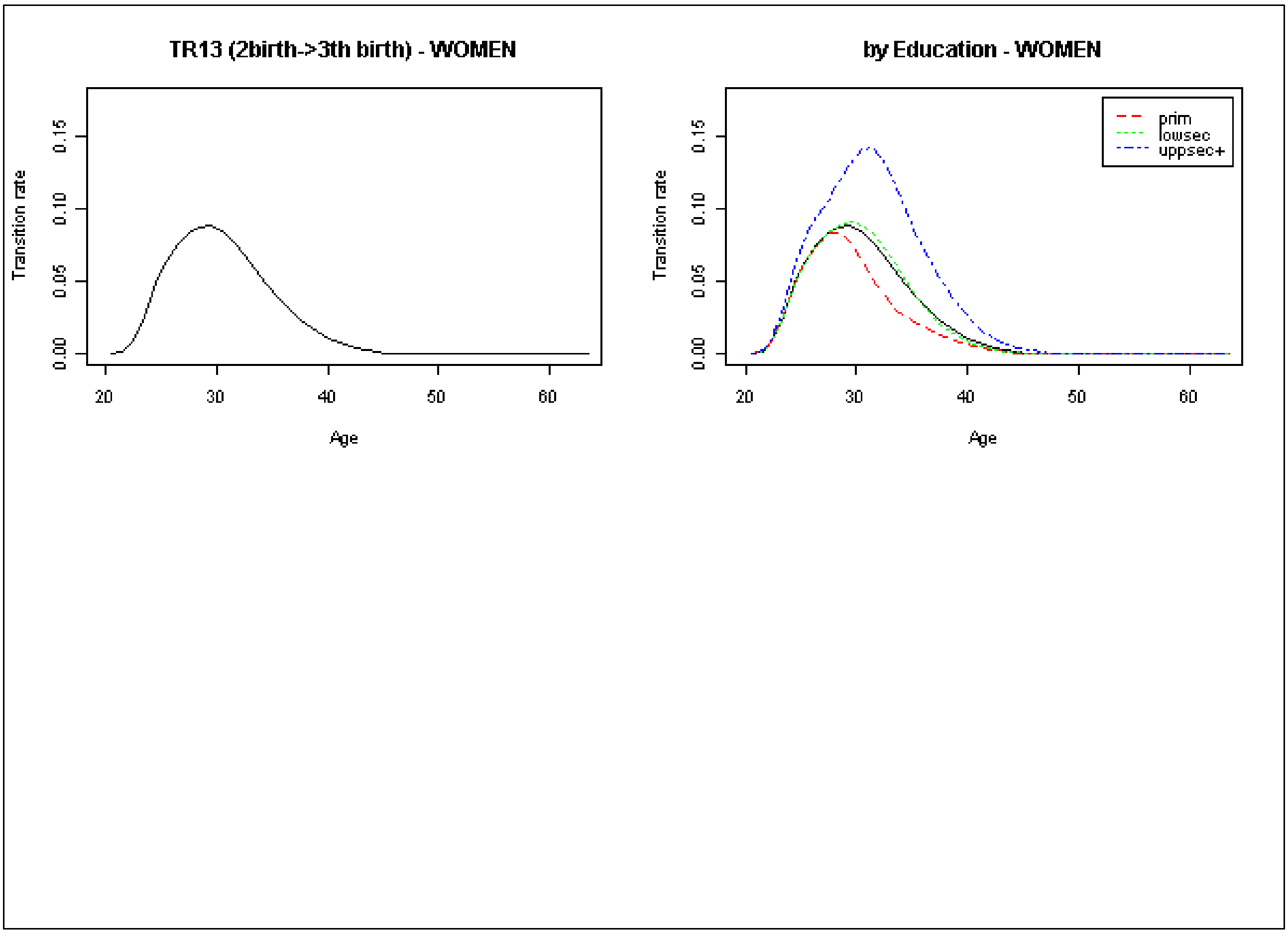
Number of events - WOMEN

	int1	int2	int3	tot
prim	28	18	12	58
lowsec	19	35	17	71
uppsec	1	13	17	31
tert	3	5	8	16
no_marr	4	3	5	12
1st_mar	40	61	41	142
2nd mar	1	6	6	13
div/wid	5	2	3	10
par_hom	0	0	0	0
no_part	48	65	48	161
1st_un	2	7	6	15
tot	50	73	54	177

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+
20	5e-04	0.9852	0.9913	1.269
21	0.0024	0.985	0.9911	1.2687
22	0.0097	0.9851	0.9912	1.2688
23	0.028	0.9859	0.9919	1.2698
24	0.0508	0.9874	0.9935	1.2718
25	0.0665	0.9897	0.9958	1.2748
26	0.0764	0.9924	0.9985	1.2783
27	0.0835	0.9949	1.001	1.2815
28	0.087	0.9437	1.0163	1.3771
29	0.0872	0.8774	1.0335	1.4945
30	0.0837	0.7734	1.0576	1.672
31	0.0768	0.6684	1.0791	1.8442
32	0.0677	0.5984	1.0886	1.9473
33	0.0576	0.5418	1.0927	2.0221

34	0.0476	0.5397	1.0516	2.0635
35	0.0383	0.5385	1.0035	2.1197
36	0.0301	0.54	0.9366	2.2177
37	0.0231	0.5424	0.8724	2.3183
38	0.0173	0.544	0.8313	2.3831
39	0.0126	0.5462	0.8002	2.4385
40	0.0088	0.5467	0.801	2.4409
41	0.0061	0.5484	0.8034	2.4482
42	0.004	0.5508	0.807	2.4591
43	0.0026	0.5538	0.8114	2.4724
44	0.0017	0.5571	0.8162	2.487
45	0.0011	0.5604	0.8211	2.5022
46	7e-04	0.5639	0.8261	2.5174
47	4e-04	0.5673	0.8311	2.5327
48	3e-04	0.5707	0.8362	2.5481
49	1e-04	0.5743	0.8414	2.5639
50	1e-04	0.5779	0.8467	2.5802
51	0	0.5817	0.8522	2.597
52	0	0.5855	0.8579	2.6141
53	0	0.5894	0.8635	2.6314
54	0	0.5932	0.8691	2.6485
55	0	0.597	0.8747	2.6654
56	0	0.6007	0.8801	2.6819
57	0	0.6044	0.8855	2.6982
58	0	0.608	0.8908	2.7146
59	0	0.6117	0.8963	2.7312
60	0	0.6156	0.9019	2.7482
61	0	0.6195	0.9077	2.7658
62	0	0.6235	0.9136	2.7839
63	0	0.6277	0.9196	
	2.8023			



TR14 (3th birth->4th birth) - Netherlands

Parameters
wl= 15 minage= 15 maxage= 100 outf= TRUE cpa= TRUE nmin= 10 lft=TRUE rgt=TRUE

Knots - MEN
NA NA

Covariates - MEN

1	NA

Number of events - MEN

1	NA

Baseline and relative risks - MEN

NA

Knots - WOMEN
32 35

Covariates - WOMEN

	code	ncat	pvalue
EDU	3	3	0.162
MAR	0	1	NA
CHI	0	1	NA
LIV	0	1	NA

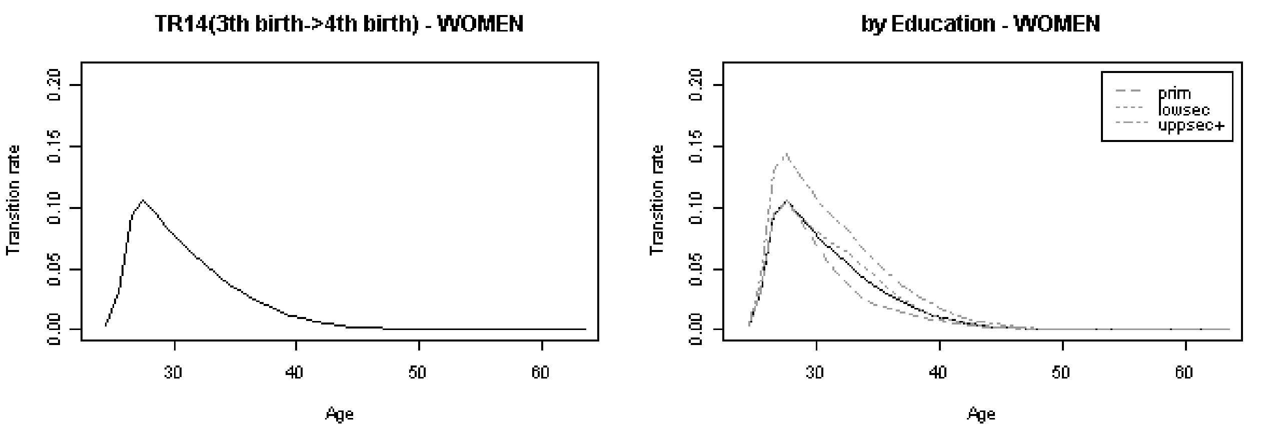
Number of events - WOMEN

	int1	int2	int3	tot
prim	12	9	5	26
lowsec	6	14	7	27
uppsec	1	4	6	11
tert	1	5	3	9
no_marr	1	1	0	2
1st_mar	17	28	15	60
2nd mar	2	0	6	8
div/wid	0	3	0	3
par_hom	0	0	0	0
no_part	17	31	15	63
1st_un	2	1	6	9
tot	20	32	21	72

Baseline and relative risks - WOMEN

age	baselin	prim	lowsec	uppsec+
24	0.0037	1.0378	1.0509	1.4724
25	0.0314	1.0221	1.035	1.4501
26	0.0968	1.0067	1.0194	1.4283
27	0.1074	0.9918	1.0044	1.4072
28	0.0965	0.937	1.027	1.4171
29	0.0843	0.8837	1.0499	1.4277
30	0.0729	0.81	1.0931	1.4554
31	0.0625	0.7278	1.1461	1.4916
32	0.0529	0.6591	1.1892	1.5205
33	0.0443	0.6142	1.2134	1.5349
34	0.0365	0.5715	1.2387	1.5513
35	0.0296	0.569	1.2056	1.5801
36	0.0237	0.5679	1.1689	1.6218
37	0.0187	0.5687	1.1174	1.6927

38	0.0145	0.5709	1.0687	1.7679
39	0.0111	0.5739	1.04	1.822
40	0.0084	0.5781	1.02	1.8708
41	0.0063	0.5827	1.0281	1.8857
42	0.0047	0.5883	1.038	1.9037
43	0.0034	0.5947	1.0493	1.9245
44	0.0025	0.6019	1.062	1.9478
45	0.0018	0.6098	1.0759	1.9733
46	0.0013	0.6182	1.0909	2.0007
47	9e-04	0.6272	1.1068	2.0298
48	6e-04	0.6367	1.1234	2.0604
49	4e-04	0.6465	1.1407	2.0921
50	3e-04	0.6565	1.1584	2.1246
51	2e-04	0.6667	1.1764	2.1576
52	1e-04	0.6771	1.1947	2.1912
53	1e-04	0.6876	1.2132	2.2251
54	0	0.6982	1.232	2.2596
55	0	0.7091	1.2512	2.2947
56	0	0.7201	1.2707	2.3305
57	0	0.7314	1.2906	2.367
58	0	0.7429	1.3109	2.4042
59	0	0.7546	1.3315	2.442
60	0	0.7664	1.3523	2.4803
61	0	0.7784	1.3734	2.519
62	0	0.7905	1.3948	2.5581
63	0	0.8027	1.4164	2.5978



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Appendix 1. R Functions in MAPLES package

`dataset (filename)`

Prepares data for the estimation of age profiles.

Option `filename`   Input datafile (with path)

it loads the initial data set (filename), checks for missing dates, detects inconsistency dates, inputs missing months and computes decimal dates, ages and status variables. The output is a data frame that is ready to be processed by the function `ageprof()`

`ageprof(d,tr,wl,minage=15, maxage=49, cpa=T,outf=F,nmin=30`

Computes age profiles for a specific transition and for a given data.frame.

Option `d`	`d` is the data.frame containing initial data (No default value). It must be prepared through the function `dataset()`
Option `tr`	Specifies which transition have to be studied. Allowed values: integer from 1 to 14 (No default value).
Option `wl`	Specifies the length of the observation window (number of years before the interview). Only events and exposure times referring to this window will be considered in the analysis. Allowed values: integer from 3 to 30 (default = 5)
Option `minage`	Defines the lower limit of age range to be considered (default = 15)
Option `maxage`	Defines the upper limit of age range to be considered (default = 100)
Option `outfile`	Creates a text file containing all the standard output (No default value).
Option `cpa`	Specifies the kind of transition rates. If `TRUE` cohort-period transition rates are computed; otherwise ageprof() computes cohort age transition rates (default = `TRUE`)
Option `outf`	`If TRUE,` creates a text file with standard output (default = `TRUE`)
Option `nmin`	Specifies the minimum number of events for each level of covariates (to be considered separately for each sex): a number of events lower than `nmin` causes the aggregation of proximate levels. The same effect is done if for each level and in each subinterval of age (defined by knots and containing at least one third of the total number of events) we have lower than `nmin/3` events. If the total amount of events (independently by levels of covariates) is lower than `nmin` a warning message appears in the standard output.
Option `lft`	If `TRUE` age profiles are flattened in the left tail of the age interval, i.e. before the age at which 5% of the events have been experienced (default= `TRUE`)
Option `rgt`	If `TRUE` age profiles are flattened in the right tail of the age interval, i.e. after the age at which 95% of the events have been experienced (default= `TRUE`)

---

plot.ageprof()

`plot.ageprof<-function(tab,sex,edu=T,mar=T,chi=T,liv=T)`

Gives a graphical representation of age profiles for a specified sex.

Option `tab`	`tab` is a list containing the standard output of `ageprof()`(No default value).
Option `sex`	Specifies for which sex transition rates have to be plotted. (No default value).
Option `edu`	If `false` excludes plots for covariate "Level of education (EDU)"
Option `mar`	If `false` excludes plots for covariate "Marital status (MAR)"
Option `chi`	If `false` excludes plots for covariate "Own children ever born (CHI)"
Option `liv`	If `false` excludes plots for covariate "Living arrangements (LIV)"

---

chkfile ()

`chkfile(filename)`

Provides basic information for the specified dataset (missing dates).

---

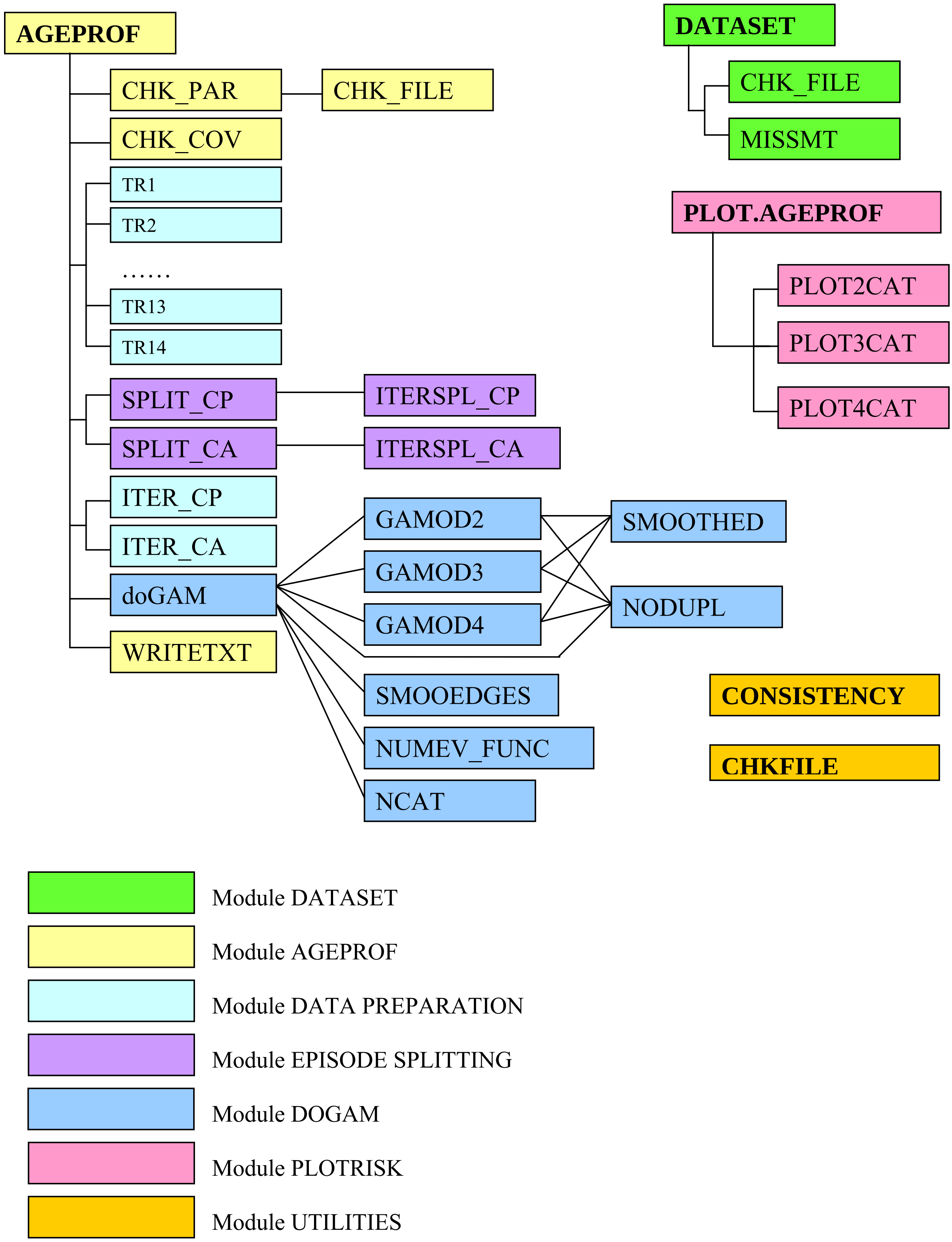
consistency ()

`consistency(filename,showid=T)`

Checks consistency for the specified data file.

Option showed	Shows ID (identification number) for inconsistent cases (default TRUE).

Figure A.1 Programme structure with the specification of all sub-functions. Subfunctions are grouped into different modules.



Appendix 2 R syntax

Index

1. Module DATASET

```
#________________________________________________________________________________
# LOAD DATA SET and compute dates and ages
#________________________________________________________________________________

dataset<-function(filename)
{
  d<-read.table(file=filename, header=TRUE, sep="\t",na.strings="NA",dec=".")

  # 1. CHECK INPUT DATA ________________________________________________________
  chk<-chk_file(d)

  if (chk=="ok") {
    # 2. MISSING MONTHS ________________________________________________________
    d<-missmt(d)
    vect<-rep(F,13)
    # 3. DATES AND AGES  _______________________________________________________
    # Date of birth
    d$birdate<-  d$ybirth -1900 + round((d$mbirth-0.5)/12,2)
    # Date at the interview
    d$intdate<-d$yint -1900 + round((d$mint-0.5)/12,2)
    #Age at the interview
    d$ageint <- d$intdate-d$birdate

    # 1 - first marriage
    if(!is.null(d$ymarr)) {
      d$mardate<- d$ymarr -1900 + round((d$mmarr-0.5)/12,2)
      d$agemarr<-d$mardate-d$birdate
      d$marr<- ifelse(is.na(d$agemarr),0,ifelse(d$agemarr<14,9,1))
      vect[1]<-T
    }
     # 2 - divorce
    if(!is.null(d$ydiv) & vect[1]) {
      d$divdate<- d$ydiv -1900 + round((d$mdiv-0.5)/12,2)
      d$agediv<-d$divdate-d$birdate
      d$div<- ifelse(is.na(d$agediv),ifelse(d$marr!=1,9,0),
          ifelse(d$marr!=1,9,ifelse(d$agediv<d$agemarr,9,1)))
      vect[2]<-T
    }
    # 3 - death of spouse
    if(!is.null(d$yved) & vect[1]) {
      d$veddate<- d$yved -1900 + round((d$mved-0.5)/12,2)
      d$ageved<-d$veddate-d$birdate
      d$ved<- ifelse(is.na(d$ageved),ifelse(d$marr!=1,9,0),
          ifelse(d$marr!=1,9,ifelse(d$ageved<d$agemarr,9,1)))
      vect[3]<-T
    }
    # 4 - second marriage after a divorce
    if(!is.null(d$ymarr2) & vect[2]) {
      d$mar2date<- d$ymarr2 -1900 + round((d$mmarr2-0.5)/12,2)
      d$agemarr2<-d$mar2date-d$birdate
      d$mar2div<- ifelse(is.na(d$agemarr2),ifelse(d$div!=1,9,0),
              ifelse(d$div!=1,9,ifelse(d$agemarr2<d$agediv,9,1)))
      vect[4]<-T
    }
    # 5 - second marriage after death of spouse
    if(!is.null(d$ymarr2) & vect[3]) {
      d$mar2date<- d$ymarr2 -1900 + round((d$mmarr2-0.5)/12,2)
      d$agemarr2<-d$mar2date-d$birdate
      d$mar2ved<- ifelse(is.na(d$agemarr2),ifelse(d$ved!=1,9,0),
              ifelse(d$ved!=1,9,ifelse(d$agemarr2<d$ageved,9,1)))
```

```
    vect[5]<-T
  }
  # 6 - first union
  if(!is.null(d$ypartn)) {
    d$partndate<- d$ypartn -1900 + round((d$mpartn-0.5)/12,2)
    d$agepartn<-d$partndate-d$birdate
    d$partn<-ifelse(is.na(d$agepartn),0,ifelse(d$agepartn<14,9,1))
    vect[6]<-T
  }
  # 7 - Exit from parental home: 0 no exit; 1 union; 2 other reasons; 9 NA
  if(!is.null(d$yexit) & vect[6]) {
    d$exitdate<-d$yexit -1900 + round((d$mexit-0.5)/12,2)
    d$agexit<-d$exitdate-d$birdate
    d$exit<- ifelse(is.na(d$agexit),0,
          ifelse(d$agexit<0 |d$partn==9,9,
          ifelse(d$partn==1 & d$agexit-d$agepartn>-0.5,1,2)))
    vect[7]<-T
  }
  # 8 - First union dissolution
  if(!is.null(d$ydiss) & vect[6]) {
    d$dissdate<-d$ydiss-1900 + round((d$mdiss-0.5)/12,2)
    d$agediss<-d$dissdate-d$birdate
    d$diss<-ifelse(is.na(d$ydiss),ifelse(d$partn!=1,9,0),
      ifelse(d$partn!=1,9,ifelse(d$agediss<d$agepartn,9,1)))
  vect[8]<-T
  }
  # 9 - second union
  if(!is.null(d$ypartn2) & vect[8]) {
    d$partn2date<- d$ypartn2 -1900 + round((d$mpartn2-0.5)/12,2)
    d$agepartn2<-d$partn2date-d$birdate
    d$partn2<- ifelse(is.na(d$agepartn2),ifelse(d$diss!=1,9,0),
               ifelse(d$diss!=1,9,ifelse(d$agepartn2<d$agediss,9,1)))
    vect[9]<-T
  }
  # 10 - first child
  if(!is.null(d$ych1)) {
    d$ch1date<-  d$ych1 -1900 + round((d$mch1-0.5)/12,2)
    d$agech1<-d$ch1date-d$birdate
    d$ch1<- ifelse(is.na(d$agech1),0,ifelse(d$agech1<14,9,1))
    vect[10]<-T
  }
  # 11 - second child
  if(!is.null(d$ych2 & vect[10])) {
    d$ch2date<-  d$ych2 -1900 + round((d$mch2-0.5)/12,2)
    d$agech2<-d$ch2date-d$birdate
    d$ch2<- ifelse(is.na(d$agech2),ifelse(d$ch1!=1,9,0),
        ifelse(d$ch1!=1,9,ifelse(d$agech2<d$agech1,9,1)))
    vect[11]<-T
  }
  # 12 - third child
  if(!is.null(d$ych3 & vect[11])) {
    d$ch3date<- d$ych3 -1900 + round((d$mch3-0.5)/12,2)
    d$agech3<-d$ch3date-d$birdate
    d$ch3<- ifelse(is.na(d$agech3),ifelse(d$ch2!=1,9,0),
        ifelse(d$ch2!=1,9,ifelse(d$agech3<d$agech2,9,1)))
    vect[12]<-T
  }
  # 13 - fourth child
  if(!is.null(d$ych4 & vect[12])) {
    d$ch4date<- d$ych4 -1900 + round((d$mch4-0.5)/12,2)
    d$agech4<-d$ch4date-d$birdate
    d$ch4<- ifelse(is.na(d$agech4),ifelse(d$ch3!=1,9,0),
```

```
          ifelse(d$ch3!=1,9,ifelse(d$agech4<d$agech3,9,1)))
      vect[13]<-T
    }
    d$vect<-c(vect,rep(NA,length(d$id)-13))
  } # close chk
if (chk!="ok") d<-chk
print(paste("Dataset extracted from",filename,"is ready."),quote=F)
return(d)
}



#______________________________________________________________________________
# CHECK DATA FILE
#______________________________________________________________________________

chk_file<-function(d)
{
  chk<-"ok"
if (!is.null(d))
{
  if (is.null(d$weight))
      {chk<-"No weights. Dataset is not ready for ageprof()"}
  if (!is.null(d$weight))  {if (any(is.na(d$weight)))
        {chk<-"Missing weights. Dataset is not ready for ageprof()."}}
  if (is.null(d$ybirth))
      {chk<-"No ybirth. Dataset is not ready for ageprof()."}
  if (is.null(d$mbirth))
      {chk<-"No mbirth. Dataset is not ready for ageprof()."}
  if (!is.null(d$ybirth)) {if(any(is.na(d$ybirth)))
      {chk<-"Missing ybirth. Dataset is not ready for ageprof()."}}
  if (!is.null(d$mbirth)) {if(any(is.na(d$mbirth)))
      {chk<-"Missing mbirth. Dataset is not ready for ageprof()."}}
  if (is.null(d$yint))
      {chk<-"No yint. Dataset is not ready for ageprof()."}
  if (is.null(d$mint))
      {chk<-"No mint. Dataset is not ready for ageprof()."}
  if (!is.null(d$yint)) {if(any(is.na(d$yint)))
      {chk<-"missing yint. Dataset is not ready for ageprof()."}}
  if (!is.null(d$mint)) {if(any(is.na(d$mint)))
      {chk<-"Missing mint. Dataset is not ready for ageprof()."}}
  if (is.null(d$sex))
      {chk<-"No sex. Dataset is not ready for ageprof()."}
  if (!is.null(d$sex)) {if( any(is.na(d$sex)))
      {chk<-"Missing sex. Dataset is not ready for ageprof()."}}
  if (is.null(d$edu))
      {chk<-"No edu. Dataset is not ready for ageprof()."}
  if (!is.null(d$edu)) {if(any(is.na(d$edu)))
      {chk<-"Missing edu. Dataset is not ready for ageprof()."}}
}
if (is.null(d)) chk<-"File not found"
return(chk)
}

#______________________________________________________________________________
# MISSING MONTH
#______________________________________________________________________________
missmt<-function(d)
{
# Exit from parental home
if(!is.null(d$yexit)) {
    if(is.null(d$mexit))  {d$mexit<-NA}
```

```
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$yexit) & is.na(d$mexit),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ypartn) & !is.null(d$mpartn))
      {temp<-ifelse(!is.na(temp) & d$yexit==d$ypartn & !is.na(d$yexit)
            & !is.na(d$ypartn) & !is.na(d$mpartn),d$mpartn,temp)}
    d$mexit<-ifelse(!is.na(temp),temp,d$mexit)
}

# First union
if(!is.null(d$ypartn)) {
    if(is.null(d$mpartn))  {d$mpartn<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ypartn) & is.na(d$mpartn),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$yexit) & !is.null(d$mexit))
      {temp<-ifelse(!is.na(temp) & d$ypartn==d$yexit & !is.na(d$ypartn)
            & !is.na(d$yexit) & !is.na(d$mexit),d$mexit,temp)}
    if(!all(is.na(temp)) & !is.null(d$ymarr) & !is.null(d$mmarr))
      {temp<-ifelse(!is.na(temp) & d$ypartn==d$ymarr & !is.na(d$ypartn)
            & !is.na(d$ymarr) & !is.na(d$mmarr),d$mmarr,temp)}
    d$mpartn<-ifelse(!is.na(temp),temp,d$mpartn)
}

# First marriage
if(!is.null(d$ymarr)) {
    if(is.null(d$mmarr))  {d$mmarr<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ymarr) & is.na(d$mmarr),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$yexit) & !is.null(d$mexit))
      {temp<-ifelse(!is.na(temp) & d$ymarr==d$yexit & !is.na(d$ymarr)
            & !is.na(d$yexit) & !is.na(d$mexit),d$mexit,temp)}
    if(!all(is.na(temp)) & !is.null(d$ypartn) & !is.null(d$mpartn))
      {temp<-ifelse(!is.na(temp) & d$ymarr==d$ypartn & !is.na(d$ymarr)
            & !is.na(d$ypartn) & !is.na(d$mpartn),d$mpartn,temp)}
    d$mmarr<-ifelse(!is.na(temp),temp,d$mmarr)
}

# Divorce
if(!is.null(d$ydiv)) {
    temp<-rep(NA,length(d$id))
    if (is.null(d$mdiv)) {d$mdiv<-NA}
    temp<-ifelse(!is.na(d$ydiv) & is.na(d$mdiv),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ymarr2) & !is.null(d$mmarr2))
      {temp<-ifelse(!is.na(temp) & d$ydiv==d$ymarr2 & !is.na(d$ydiv)
            & !is.na(d$ymarr2) &
!is.na(d$mmarr2),trunc(runif(d$id,1,d$mmarr2)),temp)}
    d$mdiv<-ifelse(!is.na(temp),temp,d$mdiv)
}

# Death of spouse
if(!is.null(d$yved)) {
    if(is.null(d$mved))   {d$mved<-NA}
temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$yved) & is.na(d$mved),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ymarr2) & !is.null(d$mmarr2))
      {temp<-ifelse(!is.na(temp) & d$yved==d$ymarr2 & !is.na(d$yved)
            & !is.na(d$ymarr2) &
!is.na(d$mmarr2),trunc(runif(d$id,1,d$mmarr2)),temp)}
    if(!all(is.na(temp)) & !is.null(d$ymarr) & !is.null(d$mmarr))
      {temp<-ifelse(!is.na(temp) & d$yved==d$ymarr & !is.na(d$yved)
            & !is.na(d$ymarr) &
!is.na(d$mmarr),trunc(runif(d$id,d$mmarr,13)),temp)}
    d$mved<-ifelse(!is.na(temp),temp,d$mved)
```

```
}

 # Second marriage
if(!is.null(d$ymarr2)) {
    if(is.null(d$mmarr2))  {d$mmarr2<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ymarr2) & is.na(d$mmarr2),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ydiv) & !is.null(d$mdiv))
      {temp<-ifelse(!is.na(temp) & d$ymarr2==d$ydiv & !is.na(d$ymarr2)
            & !is.na(d$ydiv)  & !is.na(d$mdiv),d$mdiv,temp)}
    if(!all(is.na(temp)) & !is.null(d$yved) & !is.null(d$mved))
      {temp<-ifelse(!is.na(temp) & d$ymarr2==d$yved & !is.na(d$ymarr2)
            & !is.na(d$yved)  & !is.na(d$mved),d$mved,temp)}
    d$mmarr2<-ifelse(!is.na(temp),temp,d$mmarr2)
}

# First union dissolution
if(!is.null(d$ydiss)) {
    if(is.null(d$mdiss))  {d$mdiss<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ydiss) & is.na(d$mdiss),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ypartn) & !is.null(d$mpartn))
      {temp<-ifelse(!is.na(temp) & d$ydiss==d$ypartn & !is.na(d$ydiss)
            & !is.na(d$ypartn)   &
!is.na(d$mpartn),trunc(runif(d$id,d$mpartn,13)),temp)}
    if(!all(is.na(temp)) & !is.null(d$ypartn2) & !is.null(d$mpartn2))
      {temp<-ifelse(!is.na(temp) & d$ydiss==d$ypartn2 & !is.na(d$ydiss)
            & !is.na(d$ypartn2)  &
!is.na(d$mpartn2),trunc(runif(d$id,1,d$mpartn2)),temp)}
   d$mdiss<-ifelse(!is.na(temp),temp,d$mdiss)
}

 # Second union
if(!is.null(d$ypartn2)) {
    if(is.null(d$mpartn2))  {d$mpartn2<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ypartn2) &
is.na(d$mpartn2),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ydiss) & !is.null(d$mdiss))
      {temp<-ifelse(!is.na(temp) & d$ypartn2==d$ydiss & !is.na(d$ypartn2)
            & !is.na(d$ydiss) & !is.na(d$mdiss),d$mdiss,temp)}
      d$mpartn2<-ifelse(!is.na(temp),temp,d$mpartn2)
}

 # First child
if(!is.null(d$ych1))   {
    if(is.null(d$mch1))  d$mch1<-NA
    d$mch1<-ifelse(!is.na(d$ych1) &
is.na(d$mch1),trunc(runif(d$id,1,13)),d$mch1) }

 # Second child
if(!is.null(d$ych2)) {
    if(is.null(d$mch2))  {d$mch2<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ych2) & is.na(d$mch2),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ych1) & !is.null(d$mch1))  {
      temp<-ifelse(!is.na(temp) & d$ych2==d$ych1 & !is.na(d$ych2) &
!is.na(d$ych1)
            & !is.na(d$mch1),d$mch1,temp)
      temp<-ifelse(!is.na(temp) & d$ych2==(d$ych1+1) & d$mch1>4 & !is.na(d$ych2)
          & !is.na(d$ych1) & !is.na(d$mch1),trunc(runif(d$id,d$mch1-3,13)),temp)
    }
```

```
    d$mch2<-ifelse(!is.na(temp),temp,d$mch2)
}


 # Third child

if(!is.null(d$ych3)) {
    if(is.null(d$mch3))  {d$mch3<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ych3) & is.na(d$mch3),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ych2) & !is.null(d$mch2))  {
      temp<-ifelse(!is.na(temp) & d$ych3==d$ych2 & !is.na(d$ych3) &
!is.na(d$ych2)
            & !is.na(d$mch2),d$mch2,temp)
      temp<-ifelse(!is.na(temp) & d$ych3==(d$ych2+1) & d$mch2>4 & !is.na(d$ych3)
          & !is.na(d$ych2) & !is.na(d$mch2),trunc(runif(d$id,d$mch2-3,13)),temp)
    }
    d$mch3<-ifelse(!is.na(temp),temp,d$mch3)
}

 # Fourth child
if(!is.null(d$ych4)) {
    if(is.null(d$mch4))  {d$mch4<-NA}
    temp<-rep(NA,length(d$id))
    temp<-ifelse(!is.na(d$ych4) & is.na(d$mch4),trunc(runif(d$id,1,13)),NA)
    if(!all(is.na(temp)) & !is.null(d$ych3) & !is.null(d$mch3))  {
      temp<-ifelse(!is.na(temp) & d$ych4==d$ych3 & !is.na(d$ych4) &
!is.na(d$ych3)
            & !is.na(d$mch3),d$mch3,temp)
      temp<-ifelse(!is.na(temp) & d$ych4==(d$ych3+1) & d$mch3>4 & !is.na(d$ych4)
          & !is.na(d$ych3) & !is.na(d$mch3),trunc(runif(d$id,d$mch3-3,13)),temp)
    }
    d$mch4<-ifelse(!is.na(temp),temp,d$mch4)
}

return(d)
}
```

2. Module AGEPROF

```
#_______________________________________________________________________________
# AGEPROF - MAIN FUNCTION
#_______________________________________________________________________________

ageprof<-function(d,tr,wl=5,minage=15,maxage=100,cpa=T,outf=F,nmin=30, lft=T,
rgt=T)
{
  # Checks on file and parameters__________________________________________
  chktr<-chk_par(d,wl,tr,nmin)
 if (chktr=="ok") {
    # Number of categories for each covariates
    mod<-chk_cov(d$vect[1:13],tr)
    print("Episode splitting. Please wait...",quote=F)
    # Select transition_________________________________________________
    tr<-floor(tr)
    if (tr==1) {transname<-"TR1 (never married->1st marriage)"
                d<-tr1(d,wl,cpa)}
    if (tr==2) {transname<-"TR2 (1st marriage->divorce)"
                d<-tr2(d,wl,cpa)}
    if (tr==3) {transname<-"TR3 (1st marriage->death of spouse)"
                d<-tr3(d,wl,cpa)}
    if (tr==4) {transname<-"TR4 (divorce->second marriage)"
                d<-tr4(d,wl,cpa)}
    if (tr==5) {transname<-"TR5 (death of spouse->2nd marriage)"
                d<-tr5(d,wl,cpa)}
    if (tr==6) {transname<-"TR6 (parental home->1st union)"
                d<-tr6(d,wl,cpa)}
    if (tr==7) {transname<-"TR7 (parental home->alone/others)"
                d<-tr7(d,wl,cpa)}
    if (tr==8) {transname<-"TR8 (alone/with others->1st union)"
                d<-tr8(d,wl,cpa)}
    if (tr==9) {transname<-"TR9 (1st union->disruption)"
                d<-tr9(d,wl,cpa)}
    if (tr==10) {transname<-"TR10 (Alone/others->2nd union)"
                d<-tr10(d,wl,cpa)}
    if (tr==11) {transname<-"TR11 (childless->1st birth)"
                d<-tr11(d,wl,cpa)}
    if (tr==12) {transname<-"TR12 (1st birth->2nd birth)"
                d<-tr12(d,wl,cpa)}
    if (tr==13) {transname<-"TR13 (2birth->3th birth)"
                d<-tr13(d,wl,cpa)}
    if (tr==14) {transname<-"TR14(3th birth->4th birth)"
                d<-tr14(d,wl,cpa)}

    # EPISODE SPLITTING
    if (cpa)  dx<-split_cp(d,mod)
    if (!cpa) dx<-split_ca(d,mod)


    #TRANSITION-SPECIFIC DATA MATRIX (separately for men and women)
    print("Model estimation. Please wait...",quote=F)
    if (cpa){
      matr_m<-iter_cp(subset(dx,dx$sex==1),mod)
      matr_f<-iter_cp(subset(dx,dx$sex==2),mod)}
    if (!cpa) {
      matr_m<-iter_ca(subset(dx,dx$sex==1),mod)
      matr_f<-iter_ca(subset(dx,dx$sex==2),mod)}

    #select age range (minage, maxage) and rows with non-zero exposure time
    matr_m<-subset(matr_m,matr_m[,1]>=minage & matr_m[,1]<=maxage
```

```
            & round(matr_m[,3])>0)
    matr_f<-subset(matr_f,matr_f[,1]>=minage & matr_f[,1]<=maxage
            & round(matr_f[,3])>0)

    # Calls gam models
    require(mgcv)

    if (sum(matr_m[,2])>=nmin)
      {l_m<-doGAM(matr_m,mod,nmin,lft,rgt,wom=1)}
    else
      {warning(paste("Few events for men (",
          round(sum(matr_m[,2])),"). Estimates could be incorrect!"),
              immediate.=T,call.=F)
          l_m<-rep(NA,4)}

    if (sum(matr_f[,2])>=nmin)
       {l_f<-doGAM(matr_f,mod,nmin,lft,rgt,wom=2)}
     else
         {warning(paste("Few events for women (",
          round(sum(matr_f[,2])),"). Estimates could be incorrect!"),
          immediate.=T,call.=F)
          l_f<-rep(NA,4)}

    param<-list(wl,minage,maxage,outf,cpa,nmin,lft,rgt)
    outlist<-c(transname,param,l_m,l_f)
    names(outlist)<-
c("name","wl","minage","maxage","outf","cpa","nmin","lft","rgt",
            "knot_m","cov_m","numev_m","rrisk_m",
            "knot_f","cov_f","numev_f","rrisk_f")


    # Write output text file
    if (outf==T) writetxt(tr,outlist)
  print("Estimation completed.",quote=F)
  } #close: if (chktr)

  if (chktr!="ok") { # if transition is not available
    warning(chktr,immediate.=T,call.=F)
    outlist<-chktr}

 return(outlist)
}



#_______________________________________________________________________________
# CHECK PARAMETERS FOR AGEPROF()
#_______________________________________________________________________________

chk_par<-function(d,wl,tr,nmin)
{
  # Checks for paramters
  chk<-chk_file(d)
  if (wl<3 | wl>30)  {
    chk<-"Not valid value for parameter wl: it must be 3<wl<30"
  }
  if (nmin<1)  {
    chk<-"Not valid value for parameter nmin: it must be nmin>0"
  }
  if (tr>14 | tr<1) {
    chk<-"Not valid value for parameter tr: it must be 1<t<14 "
  }
```

```
  if ((tr==1 & !d$vect[1])              |(tr==2 & !all(d$vect[1:3]))     |
    (tr==3 & !all(d$vect[1:3]))        |(tr==4 & !all(d$vect[1:4]))     |
    (tr==5 & !all(d$vect[1:4]))        | (tr==6 & !all(d$vect[6:7]))    |
    (tr==7 & !all(d$vect[6:7]))        | (tr==8 & !all(d$vect[6:7]))    |
    (tr==9 & !(d$vect[6] & d$vect[8])) | (tr==10 & !all(d$vect[8:9]))   |
    (tr==11 & !d$vect[10])             | (tr==12 & !all(d$vect[10:11])) |
    (tr==13 & !all(d$vect[10:12]))     | (tr==14 & !all(d$vect[10:13])))
    {chk<-paste("Not enough data for transition",tr)}
return(chk)
}

#________________________________________________________________________________
# CHECK COVARIATES
#________________________________________________________________________________

chk_cov<-function(vect,tr)
{
mod<-matrix(c(4,0,0,0,4,1,1,1),ncol=2)

# Marriage status
if (!vect[1])
  {mod[2,1]<-0
   mod[2,2]<-1}
if (vect[1] & any(!vect[2:5]))
  {mod[2,1]<-1
   mod[2,2]<-2}
if (all(vect[1:5]))
  {mod[2,1]<-2
   mod[2,2]<-4}

# Children ever born
if (!vect[10])
  {mod[3,1]<-0
   mod[3,2]<-1}
if (vect[10] & any(!vect[10:13]))
  {mod[3,1]<-1
   mod[3,2]<-2}
if (all(vect[10:11]) & !vect[12])
  {mod[3,1]<-2
   mod[3,2]<-3}
if (all(vect[10:12]))
  {mod[3,1]<-3
   mod[3,2]<-4}

# Living arrangement
if (!vect[7])
  {mod[4,1]<-0
   mod[4,2]<-1}
if (vect[7] & !vect[6])
  {mod[4,1]<-1
   mod[4,2]<-2}
if (all(vect[6:7]) & any(!vect[8:9]))
  {mod[4,1]<-2
   mod[4,2]<-3}
if (all(vect[6:9]))
  {mod[4,1]<-3
   mod[4,2]<-3}

# Check for specific transition (cfr. table 9 in Deliverable 22)
if (tr<9)
        {mod[2,1]<-0
        mod[2,2]<-1}
```

```
if (tr>10)
        {mod[3,1]<-0
        mod[3,2]<-1}
if (tr>5 & tr<9)
        {mod[3,1]<-1
        mod[3,2]<-2}
if (tr>1  & tr<11)
        {mod[4,1]<-0
        mod[4,2]<-1}

return (mod)
}

#________________________________________________________________________________
# WRITE OUTPUT IN A TEXT FILE
#________________________________________________________________________________
writetxt<-function(tr,tab)
{
    # Name
    outfilename<-paste("TR",tr,".txt",sep="")
    suppressWarnings(write.table(tab$name,file=outfilename,
          quote=F,row.names=F,col.names=F))
    # Parameters
    suppressWarnings(write.table("Parameters",file=outfilename,
          quote=F,row.names=F,append=T))
    suppressWarnings(write.table(cbind("wl=",tab$wl," minage=",tab$minage,
          " maxage=",tab$maxage," outf=",tab$outf," cpa=",tab$cpa,
          " nmin=",tab$nmin," lft= ",tab$lft," rgt= ",tab$rgt),
          file=outfilename,quote=F,row.names=F,
          col.names=F,append=T))

    # Men
    suppressWarnings(write.table("Knots - MEN",
          file=outfilename,quote=F,row.names=F,append=T))
    suppressWarnings(write.table(cbind(tab$knot_m[1],tab$knot_m[2]),
          file=outfilename,quote=F,row.names=F,col.names=F,append=T))
    suppressWarnings(write.table("Covariates - MEN",file=outfilename,
          quote=F,row.names=F,append=T))
    suppressWarnings(write.table(tab$cov_m,file=outfilename,col.names=NA,
          quote=F,sep="\t",append=T))
    suppressWarnings(write.table("Number of events - MEN",file=outfilename,
          quote=F,row.names=F,append=T))
    suppressWarnings(write.table(tab$numev_m,file=outfilename,col.names=NA,
          quote=F,sep="\t",append=T))
    suppressWarnings(write.table("Baseline and relative risks - MEN",
          file=outfilename,quote=F,row.names=F,append=T))
    suppressWarnings(write.table(tab$rrisk_m,file=outfilename,row.names=F,
          quote=F,sep="\t",append=T))
    # Women
    suppressWarnings(write.table("Knots - WOMEN",
          file=outfilename,quote=F,row.names=F,append=T))
    suppressWarnings(write.table(cbind(tab$knot_f[1],tab$knot_f[2]),
          file=outfilename,quote=F,row.names=F,col.names=F,append=T))
    suppressWarnings(write.table("Covariates - WOMEN",file=outfilename,
          quote=F,row.names=F,append=T))
    suppressWarnings(write.table(tab$cov_f,file=outfilename,col.names=NA,
          quote=F,sep="\t",append=T))
    suppressWarnings(write.table("Number of events - WOMEN",file=outfilename,
          quote=F,row.names=F,append=T))
    suppressWarnings(write.table(tab$numev_f,file=outfilename,col.names=NA,
          quote=F,sep="\t",append=T))
    suppressWarnings(write.table("Baseline and relative risks - WOMEN",
```

```
          file=outfilename,quote=F,row.names=F,append=T))
    suppressWarnings(write.table(tab$rrisk_f,file=outfilename,row.names=F,
          quote=F,sep="\t",append=T))
}
```

3. Module DATA PREPARATION

```
#_______________________________________________________________________________
# TR1  -  MARRIAGE
#_______________________________________________________________________________
tr1<-function(d,wl,cpa)
{

  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$mardate,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$marr==1,ifelse(d$mardate<=d$startdate,9,1),
          ifelse(d$marr==0,0,9))
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),0)
    d$agefin<-pmin(d$agemarr,d$ageint,100,na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$marr==1,ifelse(d$agemarr<=d$agestart,9,1),
          ifelse(d$marr==0,0,9))
  }
  return(d)
}



#_______________________________________________________________________________
# TR2 -  DIVORCE
#_______________________________________________________________________________
tr2<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$mardate),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$divdate,d$intdate,d$veddate,na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$marr==1,ifelse(d$div==1,
            ifelse (d$divdate<=d$startdate,9,1),
            ifelse(d$div==0,ifelse(is.na(d$veddate),0,
            ifelse(d$veddate<=d$startdate,9,2)),9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                trunc(d$agemarr),0,na.rm=TRUE)
    d$agefin<-pmin(d$agediv,d$ageint,d$ageved,100, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$marr==1,ifelse(d$div==1,
            ifelse (d$agediv<=d$agestart,9,1),
            ifelse(d$div==0,ifelse(is.na(d$ageved),0,
            ifelse(d$ageved<=d$agestart,9,2)),9)),9)
  }
  return(d)
}

#_______________________________________________________________________________
# TR3  -  DEATH OF SPOUSE
#_______________________________________________________________________________
```

```
tr3<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$mardate),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$divdate,d$intdate,d$veddate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$marr==1,ifelse(d$ved==1,
            ifelse(d$veddate<=d$startdate,9,1),
            ifelse(d$ved==0,ifelse(is.na(d$divdate),0,
            ifelse(d$divdate<=d$startdate,9,2)),9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                trunc(d$agemarr),0,na.rm=TRUE)
    d$agefin<-pmin(d$agediv,d$ageint,d$ageved,100, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$marr==1,ifelse(d$ved==1,
            ifelse (d$ageved<=d$agestart,9,1),
            ifelse(d$ved==0,ifelse(is.na(d$agediv),0,
            ifelse(d$agediv<=d$agestart,9,2)),9)),9)
  }
  return(d)
}

#___________________________________________________________________________
# TR4 -  SECOND MARRIAGE AFTER DIVORCE
#___________________________________________________________________________
tr4<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$divdate),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$mar2date,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$div==1,ifelse(d$mar2div==1,
            ifelse (d$mar2date<=d$startdate,9,1),
            ifelse(d$mar2div==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                  trunc(d$agediv),0,na.rm=TRUE)
    d$agefin<-pmin(d$agemarr2,d$ageint,100,na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$div==1,ifelse(d$mar2div==1,
            ifelse (d$agemarr2<=d$agestart,9,1),
            ifelse(d$mar2div==0,0,9)),9)
  }
  return(d)
}

#___________________________________________________________________________
# TR5 -  SECOND MARRIAGE AFTER DEATH OF SPOUSE
#___________________________________________________________________________
tr5<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
```

```
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$veddate),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$mar2date,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ved==1,ifelse(d$mar2ved==1,
            ifelse (d$mar2date<=d$startdate,9,1),
            ifelse(d$mar2ved==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                  trunc(d$ageved),0,na.rm=TRUE)
    d$agefin<-pmin(d$agemarr2,d$ageint,100, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ved==1,ifelse(d$mar2ved==1,
            ifelse (d$agemarr2<=d$agestart,9,1),
            ifelse(d$mar2ved==0,0,9)),9)
  }
  return(d)
}


#___________________________________________________________________________
# TR6  -  PARENTAL HOME to FIRST UNION
#___________________________________________________________________________
tr6<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$exitdate,d$intdate, na.rm=TRUE)
    # Censor
  d$cens<-ifelse(d$exit==1,ifelse(d$exitdate<=d$startdate,9,1),
          ifelse(d$exit==0,0,
          ifelse(d$exit==2,ifelse(d$exitdate<=d$startdate,9,2),9)))
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),0)
    d$agefin<-pmin(d$agexit,d$ageint,100, na.rm=TRUE)
    # Censor
  d$cens<-ifelse(d$exit==1,ifelse(d$agexit<=d$agestart,9,1),
          ifelse(d$exit==0,0,
          ifelse(d$exit==2,ifelse(d$agexit<=d$agestart,9,2),9)))
  }
  return(d)
}

#___________________________________________________________________________
# TR7  -  PARENTAL HOME to ALONE or WITH OTHER PEOPLE
#___________________________________________________________________________
tr7<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$exitdate,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$exit==2,ifelse(d$exitdate<=d$startdate,9,1),
          ifelse(d$exit==0,0,
          ifelse(d$exit==1,ifelse(d$exitdate<=d$startdate,9,2),9)))
  }
```

```
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),0)
    d$agefin<-pmin(d$agexit,d$ageint,100, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$exit==2,ifelse(d$agexit<=d$agestart,9,1),
          ifelse(d$exit==0,0,
          ifelse(d$exit==1,ifelse(d$agexit<=d$agestart,9,2),9)))
  }
  return(d)
}


#_____________________________________________________________________________
# TR8  -  Alone or with other people -> first union
#_____________________________________________________________________________

tr8<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$exitdate),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$partndate,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<- ifelse(d$exit==2,ifelse(d$partn==1,
             ifelse(d$partndate<=d$startdate,9,1),
             ifelse(d$partn==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                  trunc(d$agexit),0,na.rm=TRUE)
    d$agefin<-pmin(d$agepartn,d$ageint,100,na.rm=TRUE)
    # Censor
    d$cens<- ifelse(d$exit==2,ifelse(d$partn==1,
             ifelse(d$agepartn<=d$agestart,9,1),
             ifelse(d$partn==0,0,9)),9)
  }
  return(d)
}


#_____________________________________________________________________________
# TR9 -  WITH A PARTNER (first union) to WITHOUT A PARTNER
#_____________________________________________________________________________
tr9<-function(d,wl,cpa)
{
if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$partndate),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$dissdate,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<- ifelse(d$partn==1, ifelse(d$diss==1,
             ifelse(d$dissdate<=d$startdate,9,1),
             ifelse(d$diss==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                  trunc(d$agepartn),0,na.rm=TRUE)
```

```
    d$agefin<-pmin(d$agediss,d$ageint,100,na.rm=TRUE)
    # Censor
    d$cens<- ifelse(d$partn==1, ifelse(d$diss==1,
             ifelse(d$agediss<=d$agestart,9,1),
             ifelse(d$diss==0,0,9)),9)
  }
  return(d)
}


#___________________________________________________________________________
# TR10  -  From WITHOUT A PARTNER (after a union disruption) -> second union
#___________________________________________________________________________

tr10<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$dissdate),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$partn2date,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<- ifelse(d$diss==1,ifelse(d$partn2==1,
             ifelse(d$partn2date<=d$startdate,9,1),
             ifelse(d$partn2==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                  d$agediss,0,na.rm=TRUE)
    d$agefin<-pmin(d$agepartn2,d$ageint,100,na.rm=TRUE)

    # Censor
    d$cens<- ifelse(d$diss==1, ifelse(d$partn2==1,
             ifelse(d$agepartn2<=d$agestart,9,1),
             ifelse(d$partn2==0,0,9)),9)
  }
  return(d)
}


#___________________________________________________________________________
# TR11  -  FIRST CHILD
#___________________________________________________________________________

tr11<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$ch1date,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch1==1,ifelse(d$ch1date<=d$startdate,9,1),
            ifelse(d$ch1==0,0,9))
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),0)
    d$agefin<-pmin(d$agech1,d$ageint,100,na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch1==1,ifelse(d$agech1<=d$agestart,9,1),
            ifelse(d$ch1==0,0,9))
```

```
  }
  return(d)
}

#_____________________________________________________________________________
# TR12  -  SECOND CHILD
#_____________________________________________________________________________
tr12<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$ch1date+0.75),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$ch2date,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch1==1,ifelse(d$ch2==1,
            ifelse(d$ch2date<=d$startdate,9,1),
            ifelse(d$ch2==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                trunc(d$agech1+0.75),0,na.rm=TRUE)
    d$agefin<-pmin(d$agech2,d$ageint,100, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch1==1,ifelse(d$ch2==1,
            ifelse(d$agech2<=d$agestart,9,1),
            ifelse(d$ch2==0,0,9)),9)
  }
  return(d)
}

#_____________________________________________________________________________
# TR 13  -  THIRD CHILD
#_____________________________________________________________________________
tr13<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$ch2date+0.75),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$ch3date,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch2==1,ifelse(d$ch3==1,
            ifelse(d$ch3date<=d$startdate,9,1),
            ifelse(d$ch3==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                trunc(d$agech2+0.75),0,na.rm=TRUE)
    d$agefin<-pmin(d$agech3,d$ageint,100,na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch2==1,ifelse(d$ch3==1,
            ifelse (d$agech3<=d$agestart,9,1),
            ifelse(d$ch3==0,0,9)),9)
  }
  return(d)
}

#_____________________________________________________________________________
# TR14  -  FOURTH CHILD
```

```
#____________________________________________________________________________
tr14<-function(d,wl,cpa)
{
  if (cpa)  {
    # Window of observation (startdate, findate)
    d$startdate<-pmax(trunc(d$intdate)-wl,trunc(d$ch3date+0.75),
                      ceiling(d$birdate),na.rm=TRUE)
    d$findate<-pmin(d$ch4date,d$intdate, na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch3==1,ifelse(d$ch4==1,
            ifelse (d$ch4date<=d$startdate,9,1),
            ifelse(d$ch4==0,0,9)),9)
  }
  if (!cpa){
    # Window of observation (agestart, agefin)
    d$agestart<-pmax(ceiling(trunc(d$intdate)-wl-d$birdate),
                trunc(d$agech3+0.75),0,na.rm=TRUE)
    d$agefin<-pmin(d$agech4,d$ageint,100,na.rm=TRUE)
    # Censor
    d$cens<-ifelse(d$ch3==1,ifelse(d$ch4==1,
            ifelse (d$agech4<=d$agestart,9,1),
            ifelse(d$ch4==0,0,9)),9)
  }
  return(d)
}


#_____________________________________________________________________
# ITERATIONS: cohort-age rates
#_____________________________________________________________________
iter_ca<-function(dx,mod)
{
  CA<-100  #Age classes
  E<-mod[1,2]*mod[2,2]*mod[3,2]*mod[4,2]  #Combinations of categories

  # Initialize matrix of event, exposure, rates and covariates
  event<-matrix(rep(0,CA*E),ncol=CA)
  expo<-matrix(rep(0,CA*E),ncol=CA)
  covar<-matrix(rep(0,4*E),ncol=4)
  k<-0
  for (i1 in 1:mod[1,2])  {
  for (i2 in 1:mod[2,2])  {
  for (i3 in 1:mod[3,2])  {
  for (i4 in 1:mod[4,2])  {
    k<-k+1
    covar[k,1]<-i1
    covar[k,2]<-i2
    covar[k,3]<-i3
    covar[k,4]<-i4
    #Selects temporary subset for a specific combination of covariate categories
    ds<-dx
    if(mod[1,1]>0) ds<-subset(ds,ds$edu==i1)
    if(mod[2,1]>0) ds<-subset(ds,ds$mar==i2)
    if(mod[3,1]>0) ds<-subset(ds,ds$chi==i3)
    if(mod[4,1]>0) ds<-subset(ds,ds$liv==i4)
    N<-dim(ds)[1]
    for (j in 1:N) {    # selects j-th individual
        if (!is.na(ds$id[1])) {  # check if dsel is not empty
            for(i in ds$agestart[j]:trunc(ds$agefin[j])) { # select i-th year of
age
              expo[k,i]<-expo[k,i]+ ds$weight[j] # exposure time +1 year
```

```
              # EVENT  (in the i-th years)
              if (ds$cens[j]==1 & trunc(ds$agefin[j])==i) {
                 event[k,i]<-event[k,i]+ds$weight[j]# event  increases
                 expo[k,i]<-expo[k,i]-((1-(ds$agefin[j]-
                  trunc(ds$agefin[j])))*ds$weight[j])} # exposure time reduces

              # CENSOR OR INTERVIEW  (in the i-th years)
              if ((ds$cens[j]==2 | ds$cens[j]==0) & trunc(ds$agefin[j])==i) {
                 expo[k,i]<-expo[k,i]-((1-(ds$agefin[j]-
                  trunc(ds$agefin[j])))*ds$weight[j])} # exposure time reduces
              }
        }
    }
}}}}

  # Recomposes data matrix
  matr<-matrix(rep(0,CA*E*7),ncol=7)
  for (i in 1:CA) {
    for (k in 1:E) {
       matr[E*(i-1)+k,1]<-i
       matr[E*(i-1)+k,2]<-event[k,i]
       matr[E*(i-1)+k,3]<-expo[k,i]
       matr[E*(i-1)+k,4]<-covar[k,1]
       matr[E*(i-1)+k,5]<-covar[k,2]
       matr[E*(i-1)+k,6]<-covar[k,3]
       matr[E*(i-1)+k,7]<-covar[k,4]
    }
  }
  return(matr)
}



#____________________________________________________________________
# ITERATIONS: cohort-period rates
#____________________________________________________________________
iter_cp<-function(dx,mod)
{
  CA<-100  #Age classes
  E<-mod[1,2]*mod[2,2]*mod[3,2]*mod[4,2]  #Combinations of categories

  # Initialize matrix of event, exposure, rates and covariates
  event<-matrix(rep(0,CA*E),ncol=CA)
  expo<-matrix(rep(0,CA*E),ncol=CA)
  covar<-matrix(rep(0,4*E),ncol=4)
  k<-0
  for (i1 in 1:mod[1,2])  {
  for (i2 in 1:mod[2,2])  {
  for (i3 in 1:mod[3,2])  {
  for (i4 in 1:mod[4,2])  {
    k<-k+1
    covar[k,1]<-i1
    covar[k,2]<-i2
    covar[k,3]<-i3
    covar[k,4]<-i4

    #Selects temporary subset for a specific combination of covariate categories
    ds<-dx
    if(mod[1,1]>0) ds<-subset(ds,ds$edu==i1)
    if(mod[2,1]>0) ds<-subset(ds,ds$mar==i2)
    if(mod[3,1]>0) ds<-subset(ds,ds$chi==i3)
    if(mod[4,1]>0) ds<-subset(ds,ds$liv==i4)
```

```
    N<-dim(ds)[1]
    for (j in 1:N) {  # selects j-th individual
        if (!is.na(ds$id[1])) { # check if dsel is not empty
            for(i in ds$ageminw[j]:ds$agemaxw[j]) {# select i-th year of age
              expo[k,i]<-expo[k,i]+ ds$weight[j] # exposure time +1 year

              # EVENT  (in the i-th years)
              if (ds$cens[j]==1 & ds$agemaxw[j]==i)
                {event[k,i]<-event[k,i]+ds$weight[j] # event increases
                 expo[k,i]<-expo[k,i]-((1-(ds$findate[j]-
                    trunc(ds$findate[j])))*ds$weight[j])} #exposure time reduces

              # CENSOR OR INTERVIEW  (in the i-th years)
              if ((ds$cens[j]==2 | ds$cens[j]==0) & ds$agemaxw[j]==i)
                {expo[k,i]<-expo[k,i]-((1-(ds$findate[j]-
                  trunc(ds$findate[j])))*ds$weight[j])}   #exposure time reduces
            }
        }
    }
 }}}}

  # Recomposes data matrix
  matr<-matrix(rep(0,CA*E*7),ncol=7,)
  for (i in 1:CA) {
    for (k in 1:E) {
       matr[E*(i-1)+k,1]<-i
       matr[E*(i-1)+k,2]<-event[k,i]
       matr[E*(i-1)+k,3]<-expo[k,i]
       matr[E*(i-1)+k,4]<-covar[k,1]   # edu
       matr[E*(i-1)+k,5]<-covar[k,2]   # mar
       matr[E*(i-1)+k,6]<-covar[k,3]   # chi
       matr[E*(i-1)+k,7]<-covar[k,4]   # liv
    }
  }

  return(matr)
}
```

4. Module EPISODE SPLITTING

```
#_______________________________________________________________________________
# EPISODE SPLITTING (Cohort - period)
#_______________________________________________________________________________
split_cp<-function(d,mod)
{
  #Preparing dataframe
  dx<-subset(d,select=c(id,weight,birdate,startdate,findate,cens,sex,edu))
  if (mod[2,1]>0)
    {dx<-cbind(dx,subset(d,select=c(mardate,marr)))
     dx$cens<-ifelse(dx$marr==9,9,dx$cens)}
  if (mod[2,1]>1)
    {dx<-
cbind(dx,subset(d,select=c(divdate,div,veddate,ved,mar2date,mar2div,mar2ved)))
     dx$cens<-ifelse(dx$marr==1 & dx$div==9,9,dx$cens)
     dx$cens<-ifelse(dx$marr==1 & dx$ved==9,9,dx$cens)
     dx$cens<-ifelse(dx$div==1 & dx$mar2div==9,9,dx$cens)
     dx$cens<-ifelse(dx$ved==1 & dx$mar2ved==9,9,dx$cens)}
  if (mod[3,1]>0)
    {dx<-cbind(dx,subset(d,select=c(ch1date,ch1)))
     dx$cens<-ifelse(dx$ch1==9,9,dx$cens)}
  if (mod[3,1]>1)
    {dx<-cbind(dx,subset(d,select=c(ch2date,ch2)))
     dx$cens<-ifelse(dx$ch1==1 & dx$ch2==9,9,dx$cens)}
  if (mod[3,1]>2)
    {dx<-cbind(dx,subset(d,select=c(ch3date,ch3)))
     dx$cens<-ifelse(dx$ch2==1 & dx$ch3==9,9,dx$cens)}
  if (mod[4,1]>0)
    {dx<-cbind(dx,subset(d,select=c(exitdate,exit)))
     dx$cens<-ifelse(dx$exit==9,9,dx$cens)}
  if (mod[4,1]>1)
    {dx<-cbind(dx,subset(d,select=c(partndate,partn)))
     dx$cens<-ifelse(dx$partn==9,9,dx$cens)}
  if (mod[4,1]>2)
    {dx<-cbind(dx,subset(d,select=c(dissdate,diss,partn2date,partn2)))
         dx$cens<-ifelse(dx$partn==1 & dx$diss==9,9,dx$cens)
         dx$cens<-ifelse(dx$diss==1 & dx$partn2==9,9,dx$cens)}
  dx$mar<-1
  dx$chi<-1
  dx$liv<-1
  dx<-subset(dx,dx$cens<9)

  # Splitting CH1_______________________________________________________________
  if (mod[3,1]>0)
    {dx<-iterspl_cp(dx,dx$ch1,dx$ch1date)
     dx$chi<-ifelse(dx$ch1==1 & dx$ch1date<=dx$startdate,2,1)}
  # Splitting CH2_______________________________________________________________
  if (mod[3,1]>1)
    {dx<-iterspl_cp(dx,dx$ch2,dx$ch2date)
     dx$chi<-ifelse(dx$ch2==1 & dx$ch2date<=dx$startdate,3,dx$chi)}
  # Splitting CH3_______________________________________________________________
  if (mod[3,1]>2)
    {dx<-iterspl_cp(dx,dx$ch3,dx$ch3date)
     dx$chi<-ifelse(dx$ch3==1 & dx$ch3date<=dx$startdate,4,dx$chi)}
  # Splitting MARR1_____________________________________________________________
  if (mod[2,1]>0)
    {dx<-iterspl_cp(dx,dx$marr,dx$mardate)
     dx$mar<-ifelse(dx$marr==1 & dx$mardate<=dx$startdate,2,1)}
  # Splitting DIV-VED + MARR2___________________________________________________
  if (mod[2,1]>1) {
     # End of first marriage
```

```
      dx$endmardate<-ifelse(is.na(dx$divdate),dx$veddate,dx$divdate)
      dx$endmar<-ifelse(!is.na(dx$endmardate),ifelse(dx$marr==1,1,9),
                     ifelse(dx$marr==1,0,9))
      dx<-iterspl_cp(dx,dx$endmar,dx$endmardate)
      dx$mar<-ifelse(dx$endmar==1 & dx$endmardate<=dx$startdate,4,dx$mar)
      # Second marriage
      dx$marr2<-ifelse(dx$mar2div==1 | dx$mar2ved==1,1,0)
      dx<-iterspl_cp(dx,dx$marr2,dx$mar2date)
      dx$mar<-ifelse(dx$marr2==1 & dx$mar2date<=dx$startdate,3,dx$mar)}
  # Splitting EXIT________________________________________________________________
  if (mod[4,1]>0)
    {dx$exit2<-ifelse(dx$exit>0,1,0)
      dx<-iterspl_cp(dx,dx$exit2,dx$exitdate)
      dx$liv<-ifelse(dx$exit2==1 & dx$exitdate<=dx$startdate,2,1)}
  # Splitting PARTN_______________________________________________________________
  if (mod[4,1]>1)
    {dx<-iterspl_cp(dx,dx$partn,dx$partndate)
      dx$liv<-ifelse(dx$partn==1 & dx$partndate<=dx$startdate,3,dx$liv)}
  # Splitting DISS+PARTN2 ________________________________________________________
  if (mod[4,1]>2) {
      # First union disruption
      dx<-iterspl_cp(dx,dx$diss,dx$dissdate)
      dx$liv<-ifelse(dx$partn==1 & dx$partndate<=dx$startdate,2,dx$liv)
      # Second union
      dx<-iterspl_cp(dx,dx$partn2,dx$partn2date)
      dx$liv<-ifelse(dx$partn2==1 & dx$partn2date<=dx$startdate,3,dx$liv)}

  dx$ageminw<-pmax(ceiling(trunc(dx$startdate)-dx$birdate),0)
  dx$agemaxw<-pmin(ceiling(trunc(dx$findate)-dx$birdate),100)
  dx<-
subset(dx,select=c(id,weight,startdate,findate,ageminw,agemaxw,cens,sex,edu,
                        mar,chi,liv))
  return(dx)
}


#_____________________________________________________________________________
# Splitting Routine (cohort - period)
#_____________________________________________________________________________

iterspl_cp<-function(dx,dxstat,dxdate)
{
  N<-dim(dx)[1]
  k<-0
  for (i in 1:N) {
    if (dxstat[i]==1 & (dxdate[i]>dx$startdate[i] & dxdate[i]<dx$findate[i])) {
      k<-k+1
      # new row
      dx[N+k,]<-dx[i,]
      dx$startdate[N+k]<-dxdate[i]
      # old row
      dx$findate[i]<-dxdate[i]
      dx$cens[i]<-0
    }
  }
  return(dx)
}

#_____________________________________________________________________________
# EPISODE SPLITTING (Cohort - age)
#_____________________________________________________________________________
split_ca<-function(d,mod)
```

```
{
  #Preparing dataframe
  dx<-subset(d,select=c(id,weight,birdate,agestart,agefin,cens,sex,edu))
  if (mod[2,1]>0)
    {dx<-cbind(dx,subset(d,select=c(agemarr,marr)))
     dx$cens<-ifelse(dx$marr==9,9,dx$cens)}
  if (mod[2,1]>1)
    {dx<-
cbind(dx,subset(d,select=c(agediv,div,ageved,ved,agemarr2,mar2div,mar2ved)))
     dx$cens<-ifelse(dx$marr==1 & dx$div==9,9,dx$cens)
     dx$cens<-ifelse(dx$marr==1 & dx$ved==9,9,dx$cens)
     dx$cens<-ifelse(dx$div==1 & dx$mar2div==9,9,dx$cens)
     dx$cens<-ifelse(dx$ved==1 & dx$mar2ved==9,9,dx$cens)}
  if (mod[3,1]>0)
    {dx<-cbind(dx,subset(d,select=c(agech1,ch1)))
     dx$cens<-ifelse(dx$ch1==9,9,dx$cens)}
  if (mod[3,1]>1)
    {dx<-cbind(dx,subset(d,select=c(agech2,ch2)))
     dx$cens<-ifelse(dx$ch1==1 & dx$ch2==9,9,dx$cens)}
  if (mod[3,1]>2)
    {dx<-cbind(dx,subset(d,select=c(agech3,ch3)))
     dx$cens<-ifelse(dx$ch2==1 & dx$ch3==9,9,dx$cens)}
  if (mod[4,1]>0)
    {dx<-cbind(dx,subset(d,select=c(agexit,exit)))
     dx$cens<-ifelse(dx$exit==9,9,dx$cens)}
  if (mod[4,1]>1)
    {dx<-cbind(dx,subset(d,select=c(agepartn,partn)))
     dx$cens<-ifelse(dx$partn==9,9,dx$cens)}
  if (mod[4,1]>2)
    {dx<-cbind(dx,subset(d,select=c(agediss,diss,agepartn2,partn2)))
         dx$cens<-ifelse(dx$partn==1 & dx$diss==9,9,dx$cens)
         dx$cens<-ifelse(dx$diss==1 & dx$partn2==9,9,dx$cens)}
  dx$mar<-1
  dx$chi<-1
  dx$liv<-1
  dx<-subset(dx,dx$cens<9)

  # Splitting CH1_______________________________________________________________
  if (mod[3,1]>0)
    {dx<-iterspl_ca(dx,dx$ch1,dx$agech1)
     dx$chi<-ifelse(dx$ch1==1 & dx$agech1<=dx$agestart,2,1)}
  # Splitting CH2_______________________________________________________________
  if (mod[3,1]>1)
    {dx<-iterspl_ca(dx,dx$ch2,dx$agech2)
     dx$chi<-ifelse(dx$ch2==1 & dx$agech2<=dx$agestart,3,dx$chi)}
  # Splitting CH3_______________________________________________________________
  if (mod[3,1]>2)
    {dx<-iterspl_ca(dx,dx$ch3,dx$agech3)
     dx$chi<-ifelse(dx$ch3==1 & dx$agech3<=dx$agestart,4,dx$chi)}
  # Splitting MARR1_____________________________________________________________
  if (mod[2,1]>0)
    {dx<-iterspl_ca(dx,dx$marr,dx$agemarr)
     dx$mar<-ifelse(dx$marr==1 & dx$agemarr<=dx$agestart,2,1)}
  # Splitting DIV-VED + MARR2___________________________________________________
  if (mod[2,1]>1) {
     # End of first marriage
     dx$endagemarr<-ifelse(is.na(dx$agediv),dx$ageved,dx$agediv)
     dx$endmar<-ifelse(!is.na(dx$endagemarr),ifelse(dx$marr==1,1,9),
                    ifelse(dx$marr==1,0,9))
     dx<-iterspl_ca(dx,dx$endmar,dx$endagemarr)
     dx$mar<-ifelse(dx$endmar==1 & dx$endagemarr<=dx$agestart,4,dx$mar)
     # Second marriage
```

```
    dx$marr2<-ifelse(dx$mar2div==1 | dx$mar2ved==1,1,0)
    dx<-iterspl_ca(dx,dx$marr2,dx$agemarr2)
    dx$mar<-ifelse(dx$marr2==1 & dx$agemarr2<=dx$agestart,3,dx$mar)}
 # Splitting EXIT______________________________________________________________
 if (mod[4,1]>0)
   {dx$exit2<-ifelse(dx$exit>0,1,0)
    dx<-iterspl_ca(dx,dx$exit2,dx$agexit)
    dx$liv<-ifelse(dx$exit2==1 & dx$agexit<=dx$agestart,2,1)}
 # Splitting PARTN_____________________________________________________________
 if (mod[4,1]>1)
   {dx<-iterspl_ca(dx,dx$partn,dx$agepartn)
    dx$liv<-ifelse(dx$partn==1 & dx$agepartn<=dx$agestart,3,dx$liv)}
 # Splitting DISS+PARTN2 ______________________________________________________
 if (mod[4,1]>2) {
    # First union disruption
    dx<-iterspl_ca(dx,dx$diss,dx$agediss)
    dx$liv<-ifelse(dx$partn==1 & dx$agepartn<=dx$agestart,2,dx$liv)
    # Second union
    dx<-iterspl_ca(dx,dx$partn2,dx$agepartn2)
    dx$liv<-ifelse(dx$partn2==1 & dx$agepartn2<=dx$agestart,3,dx$liv)}

 dx<-subset(dx,select=c(id,weight,agestart,agefin,cens,sex,edu,
                       mar,chi,liv))
 return(dx)
}

#____________________________________________________________________________
# Splitting Routine  (cohort - age)
#____________________________________________________________________________

iterspl_ca<-function(dx,dxstat,dxage)
{
 N<-dim(dx)[1]
 k<-0
 for (i in 1:N) {
   if (dxstat[i]==1 & (dxage[i]>dx$agestart[i] & dxage[i]<dx$agefin[i])) {
      k<-k+1
      # new row
      dx[N+k,]<-dx[i,]
      dx$agestart[N+k]<-dxage[i]
      # old row
      dx$agefin[i]<-dxage[i]
      dx$cens[i]<-0
   }
 }
 return(dx)
}
```

5. Module DOGAM

```
doGAM<-function(matr,mod,nmin,lft,rgt,wom)
{
  # defining knots and age intervals (knots are at exact ages)
  prop<-cumsum(matr[,2]/sum(matr[,2]))
  knot<-c(0,0)
  knot[1]<- min(matr[,1][which(prop>=0.33)])
  knot[2]<- min(matr[,1][which(prop>=0.667)])
  int<-as.factor(ifelse(matr[,1]<knot[1],1,
      ifelse(matr[,1]>=knot[1] & matr[,1]<=knot[2],2,3)))
    namesex<-ifelse(1,"Men","Women")

  # computation of mid-points for smoothing
  midpt<-rep(0,3)
  midpt[1]<- min(matr[,1][which(prop>=0.10)])
  midpt[2]<- min(matr[,1][which(prop>=0.50)])
  midpt[3]<- min(matr[,1][which(prop>=0.90)])

  midedg<-rep(0,2)
  midedg[1]<- min(matr[,1][which(prop>=0.05)])
  midedg[2]<- min(matr[,1][which(prop>=0.95)])

  # Number of events for each level and sub-interval of age
  numev<-numev_func(matr,mod,int)

  # Check number of events in each category ___________________________
  l<-ncat(matr,mod,nmin,int)
  matr<-l[[1]]
  mod<-l[[2]]
  remove(l)

  # Rename main variables
  age<-matr[,1]
  event<-round(matr[,2])
  expos<-matr[,3]
  edu<-matr[,4]
  mar<-matr[,5]
  chi<-matr[,6]
  liv<-matr[,7]

  # BASE MODEL (without covariates)_____________________________________________
  m0<-gam(event~offset(log(expos))+ s(age),family=poisson)
  baseline0<-exp(predict.gam(m0,type="terms",terms="s(age)")+m0$coeff[1])
  age0<-nodupl(age,baseline0)[,1]
  base0<-nodupl(age,baseline0)[,2]


  # MODEL WITH COVARIATE AND AGE SUB-INTERVALS__________________________________

  # Education
  if (mod[1,1]==1){
    model<-gamod2(age,event,expos,base0,int,m0,midpt,edu)
    tab1<-model[[1]]
    pv1<- model[[2]]
    rm(model)
    namec1<-c("-lowsec","uppsec+")}
  if (mod[1,1]==2){
    model<-gamod3(age,event,expos,base0,int,m0,midpt,edu)
    tab1<-model[[1]]
    pv1<-model[[2]]
    rm(model)
```

```
    namec1<-c("-lowsec","uppsec","tert")}
  if (mod[1,1]==3){
    model<-gamod3(age,event,expos,base0,int,m0,midpt,edu)
    tab1<-model[[1]]
    pv1<- model[[2]]
    rm(model)
    namec1<-c("prim","lowsec","uppsec+")}
  if (mod[1,1]==4){
    model<-gamod4(age,event,expos,base0,int,m0,midpt,edu)
    tab1<-model[[1]]
    pv1<-model[[2]]
    rm(model)
    namec1<-c("prim","lowsec","uppsec","tert")}
  if (mod[1,1]==0)  pv1<- NA
  #Checks
  if (mod[1,1]>0){
    if (!all(tab1<5)) {
      warning(paste("Very high relative risks for EDUCATION -",namesex),
          immediate.=T,call.=F)
      warning("Check carefully estimated risks.",immediate.=T,
          call.=F)}}

  # Marital Status
  if (mod[2,1]==1){
    model<-gamod2(age,event,expos,base0,int,m0,midpt,mar)
    tab2<-model[[1]]
    pv2<-model[[2]]
    rm(model)
    namec2<-c("no_marr","1st_mar")}
  if (mod[2,1]==2){
    model<-gamod4(age,event,expos,base0,int,m0,midpt,mar)
    tab2<-model[[1]]
    pv2<-model[[2]]
    rm(model)
    namec2<-c("no_marr","1st_mar","2nd mar","div/wid")}
  if (mod[2,1]==0)  pv2<- NA
  #Checks
    if (mod[2,1]>0) {
      if (!all(tab2<5)) {
      warning(paste("Very high relative risks for MARITAL STATUS -",namesex),
          immediate.=T,call.=F)
      warning("Check carefully estimated risks.",immediate.=T,
          call.=F)}}

  # Children
  if (mod[3,1]==1){
    model<-gamod2(age,event,expos,base0,int,m0,midpt,chi)
    tab3<-model[[1]]
    pv3<-model[[2]]
    rm(model)
    namec3<-c("noch","1+ch")}
  if (mod[3,1]==2){
    model<-gamod3(age,event,expos,base0,int,m0,midpt,chi)
    tab3<-model[[1]]
    pv3<-model[[2]]
    rm(model)
    namec3<-c("no_ch","1ch","2+ch")}
  if (mod[3,1]==3){
    model<-gamod4(age,event,expos,base0,int,m0,midpt,chi)
    tab3<-model[[1]]
    pv3<-model[[2]]
    rm(model)
```

```
    namec3<-c("no_ch","1ch","2ch","3+ch")}
  if (mod[3,1]==0)  pv3<- NA
  #Checks
  if (mod[3,1]>0){
     if (!all(tab3<5)) {
      warning(paste("Very high relative risks for OWN CHILDREN EVER BORN -",
          namesex),immediate.=T,call.=F)
      warning("Check carefully estimated risks.",immediate.=T,
          call.=F)}}

  # Living arrangement
  if (mod[4,1]==1){
    model<-gamod2(age,event,expos,base0,int,m0,midpt,liv)
    tab4<-model[[1]]
    pv4<-model[[2]]
    rm(model)
    namec4<-c("par_hom","exit")}
  if (mod[4,1]==2){
    model<-gamod3(age,event,expos,base0,int,m0,midpt,liv)
    tab4<-model[[1]]
    pv4<-model[[2]]
    rm(model)
    namec4<-c("par_hom","no_part","partner")}
  if (mod[4,1]==3){
    model<-gamod3(age,event,expos,base0,int,m0,midpt,liv)
    tab4<-model[[1]]
    pv4<-model[[2]]
    rm(model)
    namec4<-c("par_hom","no_part","1st_un")}
  if (mod[4,1]==0)  pv4<- NA
  #Checks
  if (mod[4,1]>0) {
    if (!all(tab4<5)){
      warning(paste("Very high relative risks for LIVING ARRANGEMENT.",
        namesex),immediate.=T,call.=F)
      warning("Check carefully estimated risks.",immediate.=T,
          call.=F) }}

  # Final output recomposition__________________________________________________

  # 1. Number of categories and p-values for each covariates
  cov<-matrix(c(mod[,1],mod[,2],pv1,pv2,pv3,pv4),ncol=3,
    dimnames=list(c("EDU","MAR",
    "CHI","LIV"),c("code","ncat","pvalue")))

  # Age and baseline
  if (lft | rgt)
    {tab<-cbind(age0,smooedges(age0,base0,midedg,lft,rgt))}
  else
    {tab<-cbind(age0,base0)}

  # Relative risks
  namec<-as.character()
  if (mod[1,1]>0) {
    tab<-cbind(tab,tab1)
    namec<-c(namec,namec1)}
  if (mod[2,1]>0) {
    tab<-cbind(tab,tab2)
    namec<-c(namec,namec2)}
  if (mod[3,1]>0) {
    tab<-cbind(tab,tab3)
    namec<-c(namec,namec3)}
```

```
  if (mod[4,1]>0) {
    tab<-cbind(tab,tab4)
    namec<-c(namec,namec4)}
  colnames(tab)<-c("age","baselin",namec)
  tab<-round(tab,4)

  #Output list
  outlist<-list(knot,cov,numev,tab)
  return(outlist)
}


#________________________________________________________________________________
# GAM - 4 LEVELS
#________________________________________________________________________________
gamod4<-function(age,event,expos,base0,int,m0,midpt,cov)
{
  # Define covariates
  cov11<-ifelse(cov==1 & int==1,1,ifelse(cov==4 & int==1,-1,0))
  cov21<-ifelse(cov==2 & int==1,1,ifelse(cov==4 & int==1,-1,0))
  cov31<-ifelse(cov==3 & int==1,1,ifelse(cov==4 & int==1,-1,0))
  cov12<-ifelse(cov==1 & int==2,1,ifelse(cov==4 & int==2,-1,0))
  cov22<-ifelse(cov==2 & int==2,1,ifelse(cov==4 & int==2,-1,0))
  cov32<-ifelse(cov==3 & int==2,1,ifelse(cov==4 & int==2,-1,0))
  cov13<-ifelse(cov==1 & int==3,1,ifelse(cov==4 & int==3,-1,0))
  cov23<-ifelse(cov==2 & int==3,1,ifelse(cov==4 & int==3,-1,0))
  cov33<-ifelse(cov==3 & int==3,1,ifelse(cov==4 & int==3,-1,0))

  # Model
  m1<-gam(event~offset(log(expos))+ s(age)+ cov11+cov21+cov31+
         cov12+cov22+cov32+cov13+cov23+cov33,family=poisson)
  baseline1<-exp(predict.gam(m1,type="terms",terms="s(age)")+m1$coeff[1])

  # vectors of age and baseline risk without duplications
  age1<-nodupl(age,baseline1)[,1]
  base1<-nodupl(age,baseline1)[,2]

  #relative risks [row=categories; col=age interval]
  betax<-matrix(rep(0,12),ncol=3)
  betax[1,1]<-exp(m1$coeff[2])
  betax[2,1]<-exp(m1$coeff[3])
  betax[3,1]<-exp(m1$coeff[4])
  betax[4,1]<-1/(exp(m1$coeff[2]+m1$coeff[3]+m1$coeff[4]))
  betax[1,2]<-exp(m1$coeff[5])
  betax[2,2]<-exp(m1$coeff[6])
  betax[3,2]<-exp(m1$coeff[7])
  betax[4,2]<-1/(exp(m1$coeff[5]+m1$coeff[6]+m1$coeff[7]))
  betax[1,3]<-exp(m1$coeff[8])
  betax[2,3]<-exp(m1$coeff[9])
  betax[3,3]<-exp(m1$coeff[10])
  betax[4,3]<-1/(exp(m1$coeff[8]+m1$coeff[9]+m1$coeff[10]))
  #Relative risks (smoothed)
  rrisk<-smoothed(T,age1,betax,midpt,4)*base1/base0
  # Anova test
  test<-anova.gam(m0,m1,test="Chisq")
  pvalue<-round(test$P[2],3)
  #Output (tab+pvalue)
  tab<-list(rrisk,pvalue)
return(tab)
}

#________________________________________________________________________________
```

```
# GAM - 3 LEVELS
#_______________________________________________________________________________
gamod3<-function(age,event,expos,base0,int,m0,midpt,cov)
{
  # Define covariates
  cov11<-ifelse(cov==1 & int==1,1,ifelse(cov==3 & int==1,-1,0))
  cov21<-ifelse(cov==2 & int==1,1,ifelse(cov==3 & int==1,-1,0))
  cov12<-ifelse(cov==1 & int==2,1,ifelse(cov==3 & int==2,-1,0))
  cov22<-ifelse(cov==2 & int==2,1,ifelse(cov==3 & int==2,-1,0))
  cov13<-ifelse(cov==1 & int==3,1,ifelse(cov==3 & int==3,-1,0))
  cov23<-ifelse(cov==2 & int==3,1,ifelse(cov==3 & int==3,-1,0))

  m1<-gam(event~offset(log(expos))+ s(age)+ cov11+cov21+
         cov12+cov22+cov13+cov23,family=poisson)
  baseline1<-exp(predict.gam(m1,type="terms",terms="s(age)")+m1$coeff[1])

  # vectors of age and baseline risk without duplications
  age1<-nodupl(age,baseline1)[,1]
  base1<-nodupl(age,baseline1)[,2]

  #relative risks [row=categories; col=age interval]
  betax<-matrix(rep(0,9),ncol=3)
  betax[1,1]<-exp(m1$coeff[2])
  betax[2,1]<-exp(m1$coeff[3])
  betax[3,1]<-1/(exp(m1$coeff[2]+m1$coeff[3]))
  betax[1,2]<-exp(m1$coeff[4])
  betax[2,2]<-exp(m1$coeff[5])
  betax[3,2]<-1/(exp(m1$coeff[4]+m1$coeff[5]))
  betax[1,3]<-exp(m1$coeff[6])
  betax[2,3]<-exp(m1$coeff[7])
  betax[3,3]<-1/(exp(m1$coeff[6]+m1$coeff[7]))
  #Relative risks (smoothed)
  rrisk<-smoothed(T,age1,betax,midpt,3)*base1/base0

  # Anova test
  test<-anova.gam(m0,m1,test="Chisq")
  pvalue<-round(test$P[2],3)
  #Output (tab+pvalue)
  tab<-list(rrisk,pvalue)
return(tab)
}

#_______________________________________________________________________________
# GAM - 2 LEVELS
#_______________________________________________________________________________
gamod2<-function(age,event,expos,base0,int,m0,midpt,cov)
{
  # Define covariates
  cov11<-ifelse(cov==1 & int==1,1,ifelse(cov==2 & int==1,-1,0))
  cov12<-ifelse(cov==1 & int==2,1,ifelse(cov==2 & int==2,-1,0))
  cov13<-ifelse(cov==1 & int==3,1,ifelse(cov==2 & int==3,-1,0))
  m1<-gam(event~offset(log(expos))+ s(age)+ cov11+
         cov12+cov13,family=poisson)
  baseline1<-exp(predict.gam(m1,type="terms",terms="s(age)")+m1$coeff[1])

  # vectors of age and baseline risk without duplications
  age1<-nodupl(age,baseline1)[,1]
  base1<-nodupl(age,baseline1)[,2]

  #relative risks [row=categories; col=age interval]
  betax<-matrix(rep(0,6),ncol=3)
  betax[1,1]<-exp(m1$coeff[2])
```

```
  betax[2,1]<-1/(exp(m1$coeff[2]))
  betax[1,2]<-exp(m1$coeff[3])
  betax[2,2]<-1/(exp(m1$coeff[3]))
  betax[1,3]<-exp(m1$coeff[4])
  betax[2,3]<-1/(exp(m1$coeff[4]))
  #Relative risks (smoothed)
  rrisk<-smoothed(T,age1,betax,midpt,2)*base1/base0
  # Anova test
  test<-anova.gam(m0,m1,test="Chisq")
  pvalue<-round(test$P[2],3)
  #Output (tab+pvalue)
  tab<-list(rrisk,pvalue)
return(tab)
}


#________________________________________________________________________________
# AGE AND BASELINE WITHOUT DUPLICATIONS
#________________________________________________________________________________

nodupl<-function(agem,baselinem)
{
  vm<-matrix(rep(0,length(unique(agem))*2),ncol=2)
  j<-1
  vm[j,1]<-agem[1]
  vm[j,2]<-baselinem[1]
  for (i in 1:length(agem)) {
    if (agem[i]!=vm[j,1]) {
      j<-j+1
      vm[j,1]<-agem[i]
      vm[j,2]<-baselinem[i]
    }
  }
return(vm)
}

#________________________________________________________________________________
# SMOOTHING PROCEDURE 1 (for relative risks)
# from step-curves to continous curves
#________________________________________________________________________________
smoothed<-function(logistic,agex,betax,midpt,ncat)
{
  # computation of distances between mid-points
  ddist<-c(0,0)
  ddist[1]<-which(agex==midpt[2])-which(agex==midpt[1])
  ddist[2]<-which(agex==midpt[3])-which(agex==midpt[2])
  weight1<-c(rep(0,ddist[1]))
  weight2<-c(rep(0,ddist[2]))
  # LINEAR WEIGHTS
    if (!logistic) {
      for (i in 1:ddist[1])
        {weight1[i]<-i/(ddist[1]+1)}
      for (i in 1:ddist[2])
        {weight2[i]<-i/(ddist[2]+1)}}
  # LOGISTIC WEIGHTS
  r<-5/ddist
  cc<-exp(((ddist+1)*r)/2)
  if (logistic) {
    for (i in 1:ddist[1])
      {weight1[i]<-1/(1+cc[1]*exp(-r[1]*i))}
    for (i in 1:ddist[2])
      {weight2[i]<-1/(1+cc[2]*exp(-r[2]*i))}
```

```
  }

  rrisk<-matrix(rep(0,length(agex)*ncat),ncol=ncat)
  # SMOOTHING ROUTINE
  for (j in 1:ncat)  {
      k1<-0
      k2<-0
      for (i in 1:length(agex))  {
        if (agex[i]<midpt[1]) {rrisk[i,j]<-betax[j,1]}
        if (agex[i]>=midpt[1] & agex[i]<midpt[2]) {
          k1<-k1+1
          rrisk[i,j]<-betax[j,1]*(1-weight1[k1])+betax[j,2]*weight1[k1]
        }
        if (agex[i]==midpt[2]) {rrisk[i,j]<-betax[j,2]}
        if (agex[i]>midpt[2] & agex[i]<=midpt[3]) {
          k2<-k2+1
          rrisk[i,j]<-betax[j,2]*(1-weight2[k2])+betax[j,3]*weight2[k2]
        }
        if (agex[i]>midpt[3]) {rrisk[i,j]<-betax[j,3]}
      }
  }
  return(rrisk)
}


#________________________________________________________________________________
# SMOOTHING PROCEDURE 2 (flattens baseline at the edges)
#________________________________________________________________________________
smooedges<-function(age0,base0,midedg,lft,rgt)
{
  # Baseline smoothing at the hedges
  lowage<-min(age0)
  highage<-max(age0)
  ddist<-rep(0,2)
  ddist[1]<-which(age0==midedg[1])-1
  ddist[2]<-which(age0==highage)-which(age0==midedg[2])
  weight1<-c(rep(0,ddist[1]))
  weight2<-c(rep(0,ddist[2]))
  r<-10/ddist
  cc<-exp(((ddist+1)*r)/2)
  for (i in 1:ddist[1])
     {weight1[i]<-1/(1+cc[1]*exp(-r[1]*i))}
  for (i in 1:ddist[2])
     {weight2[i]<-1/(1+cc[2]*exp(-r[2]*i))}

  basex<-base0
  if (lft) {
    for (i in 1:(which(age0==midedg[1])-1))
      {basex[i]<-base0[i]*weight1[i]}
  }
  k<-1
  if (rgt) {
    for (i in (which(age0==midedg[2])+1):which(age0==highage))
      {basex[i]<-base0[i]*(1-weight2[k])
      k<-k+1}
  }
 return(basex)
}


#________________________________________________________________________________
# Prepare TABLE with NUMBER OF EVENTS for each combination of covariate levels
```

```
# and sub-interval of ages
#________________________________________________________________________________
numev_func<-function(matr,mod,int)
{
  numev<-matrix(rep(0,sum(mod[,2][mod[,2]>1])*4+4),ncol=4)
  z<-0
  for (k in 1:4){
    if (mod[k,2]>1) {
      for (i in 1:mod[k,2]) {
        z<-z+1
        for (j in 1:3)
          {numev[z,j]<-round(sum(matr[,2][matr[,k+3]==i & int==j]))}
        numev[z,4]<-sum(numev[z,1:3])
      }
    }
  }
  numev[z+1,]<-c(round(sum(matr[,2][int==1])),
          round(sum(matr[,2][int==2])),round(sum(matr[,2][int==3])),
      round(sum(matr[,2])))

  # Labels rows and columns
  namec0<-c("prim","lowsec","uppsec","tert")
  if (mod[2,1]>0) {
    if (mod[2,1]==1)  namec0<-c(namec0,"no_marr","1st_mar")
    if (mod[2,1]==2)  namec0<-c(namec0,"no_marr","1st_mar","2nd mar","div/wid")
  }
  if (mod[3,1]>0) {
    if (mod[3,1]==1)  namec0<-c(namec0,"noch","1+ch")
    if (mod[3,1]==2)  namec0<-c(namec0,"no_ch","1ch","2+ch")
    if (mod[3,1]==3)  namec0<-c(namec0,"no_ch","1ch","2ch","3+ch")
  }
  if (mod[4,1]>0) {
    if (mod[4,1]==1)  namec0<-c(namec0,"par_hom","exit")
    if (mod[4,1]==2)  namec0<-c(namec0,"par_hom","no_part","partner")
    if (mod[4,1]==3)  namec0<-c(namec0,"par_hom","no_part","1st_un")
  }
  rownames(numev)<-c(namec0,"tot")
  colnames(numev)<-c("int1","int2","int3","tot")
return(numev)
}

#________________________________________________________________________________
# CHANGE mod and MATR according to number of events in each categories
#________________________________________________________________________________
ncat<-function(matr,mod,nmin,int)
{
  nm3<-nmin/3
  # EDU ___________________________
  if (mod[1,1]==4)   {
    if (sum(matr[,2][matr[,4]==3 & int==1])<nm3 |
        sum(matr[,2][matr[,4]==3 & int==2])<nm3 |
        sum(matr[,2][matr[,4]==3 & int==3])<nm3 |
        sum(matr[,2][matr[,4]==4 & int==1])<nm3 |
        sum(matr[,2][matr[,4]==4 & int==2])<nm3 |
        sum(matr[,2][matr[,4]==4 & int==3])<nm3)
          {mod[1,1]<-3
           mod[1,2]<-3
           matr[,4]<-ifelse(matr[,4]==4,3,matr[,4])}
     if (sum(matr[,2][matr[,4]==1 & int==1])<nm3 |
         sum(matr[,2][matr[,4]==1 & int==2])<nm3 |
         sum(matr[,2][matr[,4]==1 & int==3])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==1])<nm3 |
```

```
        sum(matr[,2][matr[,4]==2 & int==2])<nm3 |
        sum(matr[,2][matr[,4]==2 & int==3])<nm3)
          {mod[1,1]<-2
           mod[1,2]<-3
           matr[,4]<-ifelse(matr[,4]!=1,matr[,4]-1,matr[,4])}
 }
 if (mod[1,1]==3){
     if (sum(matr[,2][matr[,4]==1 & int==1])<nm3 |
         sum(matr[,2][matr[,4]==1 & int==2])<nm3 |
         sum(matr[,2][matr[,4]==1 & int==3])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==1])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==2])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==3])<nm3)
           {mod[1,1]<-1
            mod[1,2]<-2
            matr[,4]<-ifelse(matr[,4]!=1,matr[,4]-1,matr[,4])}
 }
 if (mod[1,1]==2){
     if (sum(matr[,2][matr[,4]==2 & int==1])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==2])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==3])<nm3 |
         sum(matr[,2][matr[,4]==3 & int==1])<nm3 |
         sum(matr[,2][matr[,4]==3 & int==2])<nm3 |
         sum(matr[,2][matr[,4]==3 & int==3])<nm3)
           {mod[1,1]<-1
            mod[1,2]<-2
            matr[,4]<-ifelse(matr[,4]==3,2,matr[,4])}
 }
 if (mod[1,1]==1){
     if (sum(matr[,2][matr[,4]==1 & int==1])<nm3 |
         sum(matr[,2][matr[,4]==1 & int==2])<nm3 |
         sum(matr[,2][matr[,4]==1 & int==3])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==1])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==2])<nm3 |
         sum(matr[,2][matr[,4]==2 & int==3])<nm3)
           {mod[1,1]<-0
            mod[1,2]<-1
            matr[,4]<-ifelse(matr[,4]==2,1,matr[,4])}
 }
 # MAR__________________________
 if (mod[2,1]==2){
   if (sum(matr[,2][matr[,5]==2 & int==1])<nm3 |
       sum(matr[,2][matr[,5]==2 & int==2])<nm3 |
       sum(matr[,2][matr[,5]==2 & int==3])<nm3 |
       sum(matr[,2][matr[,5]==3 & int==1])<nm3 |
       sum(matr[,2][matr[,5]==3 & int==2])<nm3 |
       sum(matr[,2][matr[,5]==3 & int==3])<nm3 |
       sum(matr[,2][matr[,5]==4 & int==1])<nm3 |
       sum(matr[,2][matr[,5]==4 & int==2])<nm3 |
       sum(matr[,2][matr[,5]==4 & int==3])<nm3 )
         {mod[2,1]<-1
          mod[2,2]<-2
          matr[,5]<-ifelse(matr[,5]==3 | matr[,5]==4,2,matr[,5])}
 }
 if (mod[2,1]==1){
   if (sum(matr[,2][matr[,5]==1 & int==1])<nm3 |
       sum(matr[,2][matr[,5]==1 & int==2])<nm3 |
       sum(matr[,2][matr[,5]==1 & int==3])<nm3 |
       sum(matr[,2][matr[,5]==2 & int==1])<nm3 |
       sum(matr[,2][matr[,5]==2 & int==2])<nm3 |
       sum(matr[,2][matr[,5]==2 & int==3])<nm3 )
         {mod[2,1]<-0
```

```
          mod[2,2]<-1
          matr[,5]<-ifelse(matr[,5]==2,1,matr[,5])}
  }
  # CHI___________________________
  if (mod[3,1]==3){
    if (sum(matr[,2][matr[,6]==3 & int==1])<nm3 |
        sum(matr[,2][matr[,6]==3 & int==2])<nm3 |
        sum(matr[,2][matr[,6]==3 & int==3])<nm3 |
        sum(matr[,2][matr[,6]==4 & int==1])<nm3 |
        sum(matr[,2][matr[,6]==4 & int==2])<nm3 |
        sum(matr[,2][matr[,6]==4 & int==3])<nm3 )
          {mod[3,1]<-2
          mod[3,2]<-3
          matr[,6]<-ifelse(matr[,6]==4,3,matr[,6])}
  }
  if (mod[3,1]==2){
    if (sum(matr[,2][matr[,6]==2 & int==1])<nm3 |
        sum(matr[,2][matr[,6]==2 & int==2])<nm3 |
        sum(matr[,2][matr[,6]==2 & int==3])<nm3 |
        sum(matr[,2][matr[,6]==3 & int==1])<nm3 |
        sum(matr[,2][matr[,6]==3 & int==2])<nm3 |
        sum(matr[,2][matr[,6]==3 & int==3])<nm3 )
          {mod[3,1]<-1
          mod[3,2]<-2
          matr[,6]<-ifelse(matr[,6]==3,2,matr[,6])}
  }
  if (mod[3,1]==1){
    if (sum(matr[,2][matr[,6]==1 & int==1])<nm3 |
        sum(matr[,2][matr[,6]==1 & int==2])<nm3 |
        sum(matr[,2][matr[,6]==1 & int==3])<nm3 |
        sum(matr[,2][matr[,6]==2 & int==1])<nm3 |
        sum(matr[,2][matr[,6]==2 & int==2])<nm3 |
        sum(matr[,2][matr[,6]==2 & int==3])<nm3 )
          {mod[3,1]<-0
          mod[3,2]<-1
          matr[,6]<-ifelse(matr[,6]==2,1,matr[,6])}
  }
  # LIV___________________________
  if (mod[4,1]>1){
    if (sum(matr[,2][matr[,7]==2 & int==1])<nm3 |
        sum(matr[,2][matr[,7]==2 & int==2])<nm3 |
        sum(matr[,2][matr[,7]==2 & int==3])<nm3 |
        sum(matr[,2][matr[,7]==3 & int==1])<nm3 |
        sum(matr[,2][matr[,7]==3 & int==2])<nm3 |
        sum(matr[,2][matr[,7]==3 & int==3])<nm3)
          {mod[4,1]<-1
          mod[4,2]<-2
          matr[,7]<-ifelse(matr[,7]==3,2,matr[,7])}
  }
  if (mod[4,1]==1){
    if (sum(matr[,2][matr[,7]==1 & int==1])<nm3 |
        sum(matr[,2][matr[,7]==1 & int==2])<nm3 |
        sum(matr[,2][matr[,7]==1 & int==3])<nm3 |
        sum(matr[,2][matr[,7]==2 & int==1])<nm3 |
        sum(matr[,2][matr[,7]==2 & int==2])<nm3 |
        sum(matr[,2][matr[,7]==2 & int==3])<nm3)
          {mod[4,1]<-0
          mod[4,2]<-1
          matr[,7]<-ifelse(matr[,7]==2,1,matr[,7])}
  }
out<-list(matr,mod)
return(out)
```

```
}
```

6. Module PLOTRISK

```
#________________________________________________________________________________
# PLOT AGE PROFILES
#________________________________________________________________________________

plot.ageprof<-function(tab,sex,edu=T,mar=T,chi=T,liv=T)
{
  chk<-T
  if (sex!=1 & sex!=2) {
    warning("Not valid parameters",immediate.=T,call.=F)
    chk<-F
  }
  if (sex==1) {   # Men
    if (!is.na(tab$rrisk_m[1])) {
      rrisk<-tab$rrisk_m
      mod<-tab$cov_m[,1:2]
      pvalue<-tab$cov_m[,3]
      nsex<-"- MEN"
    }
    else chk<-F
  }
  if (sex==2) {    # Women
    if (!is.na(tab$rrisk_f[1])) {
      rrisk<-tab$rrisk_f
      mod<-tab$cov_f[,1:2]
      pvalue<-tab$cov_f[,3]
      nsex<-"- WOMEN"
    }
    else chk<-F
    }
  if (chk){
    age<-rrisk[,1]
    baseline<-rrisk[,2]
    hgraph<-max(baseline)*2
    minage<-min(age)
    maxage<-max(age)

    # Open window
    windows(width=7,height=5)
    par(mfrow=c(2,2),cex=.6)

    # Plot 1. Baseline
    plot(c(minage,maxage),c(0,hgraph),main=paste(tab$name,nsex),
            xlab="Age",ylab="Transition rate",type="n")
    lines(age+0.5,baseline)
    k<-3

    # Plot 2. By education
    if (mod[1,1]>0) {
      if (edu){
        plot(c(minage,maxage),c(0,hgraph),main=paste("by Education",nsex),
              xlab="Age",ylab="Transition rate",type="n")
        lines(age+0.5,baseline)}
      if (mod[1,1]==1){
        namec<-c("-lowsec","uppsec+")
        if (edu) plot2cat(rrisk,k,namec,pvalue[1])
        k<-k+2}
      if (mod[1,1]==2){
        namec<-c("-lowsec","uppsec","tert")
```

```
        if (edu) plot3cat(rrisk,k,namec,pvalue[1])
        k<-k+3}
      if (mod[1,1]==3){
        namec<-c("prim","lowsec","uppsec+")
        if (edu) plot3cat(rrisk,k,namec,pvalue[1])
        k<-k+3}
      if (mod[1,1]==4){
        namec<-c("prim","lowsec","uppsec","tert")
        if (edu) plot4cat(rrisk,k,namec,pvalue[1])
        k<-k+4}
    }
    # Plot 3. By Marital Status
    if (mod[2,1]>0) {
      if (mar) {
        plot(c(minage,maxage),c(0,hgraph),main=paste("by Marital Status",nsex),
            xlab="Age",ylab="Transition rate",type="n")
        lines(age+0.5,baseline)}
      if (mod[2,1]==1){
        namec<-c("no_marr","1st_marr")
        if (mar) plot2cat(rrisk,k,namec,pvalue[2])
        k<-k+2}
      if (mod[2,1]==2){
        namec<-c("no_marr","1st_mar","2nd mar","div/wid")
        if (mar) plot4cat(rrisk,k,namec,pvalue[2])
        k<-k+4}
    }
    # Children
    if (mod[3,1]>0) {
      if (chi) {
        plot(c(minage,maxage),c(0,hgraph),main=paste("by Children Ever
Born",nsex),
            xlab="Age",ylab="Transition rate",type="n")
        lines(age+0.5,baseline)}
      if (mod[3,1]==1){
        namec<-c("noch","1+ch")
        if (chi) plot2cat(rrisk,k,namec,pvalue[3])
        k<-k+2}
      if (mod[3,1]==2){
        namec<-c("no_ch","1ch","2+ch")
      if (chi) plot3cat(rrisk,k,namec,pvalue[3])
      k<-k+3}
      if (mod[3,1]==3){
        namec<-c("no_ch","1ch","2ch","3+ch")
        if (chi) plot4cat(rrisk,k,namec,pvalue[3])
        k<-k+4}
    }

    # Living arrangement
    if (mod[4,1]>0) {
      if (liv){
        plot(c(minage,maxage),c(0,hgraph),main=paste("by Living
Arrangement",nsex),
            xlab="Age",ylab="Transition rate",type="n")
        lines(age+0.5,baseline)}
      if (mod[4,1]==1){
        namec<-c("par_hom","exit")
        if (liv) plot2cat(rrisk,k,namec,pvalue[4])
        k<-k+2}
      if (mod[4,1]==2){
        namec<-c("par_hom","no_part","partner")
        if (liv) plot3cat(rrisk,k,namec,pvalue[4])
        k<-k+3}
```

```
      if (mod[4,1]==3){
        namec<-c("par_hom","no_part","1st_un")
      if (liv) plot3cat(rrisk,k,namec,pvalue[4])
      k<-k+3}
    }
  }
  if (!chk)
    {namesex<-ifelse(sex==1,"men","women")
      warning(paste("Empty list for ",namesex),immediate.=T,call.=F)}
}

#________________________________________________________________________________
 # plot two curves
#________________________________________________________________________________
plot2cat<-function(rrisk,k,namec,pvalue){
    rate1<-rrisk[,2]*rrisk[,k]
    rate2<-rrisk[,2]*rrisk[,k+1]
    color<-c("red","green")
    if (pvalue>=0.05) color<-rep("gray60",2)
    linetype<-c(2,3)
    lines(rrisk[,1]+0.5,rate1,col=color[1],lty=linetype[1])
    lines(rrisk[,1]+0.5,rate2,col=color[2],lty=linetype[2])
    posx<-(0.75*max(rrisk[,1])+0.25*min(rrisk[,1]))
    legend
(posx,max(rrisk[,2])*2,namec,lty=linetype,col=color,cex=1,y.intersp=0.8)
}
#________________________________________________________________________________
# plot three curves
#________________________________________________________________________________
plot3cat<-function(rrisk,k,namec,pvalue) {
    rate1<-rrisk[,2]*rrisk[,k]
    rate2<-rrisk[,2]*rrisk[,k+1]
    rate3<-rrisk[,2]*rrisk[,k+2]
    color<-c("red","green","blue")
    if (pvalue>=0.05) color<-rep("gray60",3)
    linetype<-c(2,3,4)
    lines(rrisk[,1]+0.5,rate1,col=color[1],lty=linetype[1])
    lines(rrisk[,1]+0.5,rate2,col=color[2],lty=linetype[2])
    lines(rrisk[,1]+0.5,rate3,col=color[3],lty=linetype[3])
    posx<-(0.75*max(rrisk[,1])+0.25*min(rrisk[,1]))
    legend
(posx,max(rrisk[,2])*2,namec,lty=linetype,col=color,cex=1,y.intersp=0.8)
}
#________________________________________________________________________________
# plot four curves
#________________________________________________________________________________
plot4cat<-function(rrisk,k,namec,pvalue){
    rate1<-rrisk[,2]*rrisk[,k]
    rate2<-rrisk[,2]*rrisk[,k+1]
    rate3<-rrisk[,2]*rrisk[,k+2]
    rate4<-rrisk[,2]*rrisk[,k+3]
    color<-c("red","green","blue","violet")
    if (pvalue>=0.05) color<-rep("gray60",4)
    linetype<-c(2,3,4,5)
    lines(rrisk[,1]+0.5,rate1,col=color[1],lty=linetype[1])
    lines(rrisk[,1]+0.5,rate2,col=color[2],lty=linetype[2])
    lines(rrisk[,1]+0.5,rate3,col=color[3],lty=linetype[3])
    lines(rrisk[,1]+0.5,rate4,col=color[4],lty=linetype[4])
    posx<-(0.75*max(rrisk[,1])+0.25*min(rrisk[,1]))
    legend
(posx,max(rrisk[,2])*2,namec,lty=linetype,col=color,cex=1,y.intersp=0.8)
}
```

7. Module UTILITIES

```
consistency<-function(filename,showid=F)
{
print(paste("Consistency check. File:",filename),quote=F)
print("____________________________________________",quote=F)
# showid=show ID of inconsistent cases
d<-read.table(file=filename, header=TRUE, sep="\t",na.strings="NA",dec=".")

# exit from parental home     <     birth
if (!is.null(d$yexit) & !is.null(d$ybirth)) {
  not<-ifelse(!is.na(d$yexit) & !is.na(d$ybirth) & d$yexit<d$ybirth,T,F)
  if (any(not==T)) {
    print(paste("exit from parental home<birth -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#exit from parental home > interview
if (!is.null(d$yexit) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$yexit) & !is.na(d$yint) & d$yexit>d$yint,T,F)
  if (any(not==T)) {
    print(paste("exit from parental home>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}

#first union      <     birth +14
if (!is.null(d$ypartn) & !is.null(d$ybirth)) {
  not<-ifelse(!is.na(d$ypartn) & !is.na(d$ybirth) & d$ypartn<d$ybirth+14,T,F)
  if (any(not==T)) {
    print(paste("1st union<birth+14 -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#1st union > interview
if (!is.null(d$ypartn) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ypartn) & !is.na(d$yint) & d$ypartn>d$yint,T,F)
  if (any(not==T)) {
    print(paste("1st union>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}

#marriage   <     birth  +14
if (!is.null(d$ymarr) & !is.null(d$ybirth)) {
  not<-ifelse(!is.na(d$ymarr) & !is.na(d$ybirth) & d$ymarr<d$ybirth+14,T,F)
  if (any(not==T)) {
    print(paste("1st marriage<birth +14 -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}

#1st marriage > interview
if (!is.null(d$ymarr) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ymarr) & !is.na(d$yint) & d$ymarr>d$yint,T,F)
  if (any(not==T)) {
```

```
    print(paste("1st marriage>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#divorce    <     marriage
if (!is.null(d$ydiv) & !is.null(d$ymarr)) {
  not<-ifelse(!is.na(d$ydiv) & !is.na(d$ymarr) & d$ydiv<d$ymarr,T,F)
  if (any(not==T)) {
    print(paste("divorce<1st marriage -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}

#divorce    > interview
if (!is.null(d$ydiv) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ydiv) & !is.na(d$yint) & d$ydiv>d$yint,T,F)
  if (any(not==T)) {
    print(paste("divorce>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}

#death of spouse  <     marriage
if (!is.null(d$yved) & !is.null(d$ymarr)) {
  not<-ifelse(!is.na(d$yved) & !is.na(d$ymarr) & d$yved<d$ymarr,T,F)
  if (any(not==T)) {
    print(paste("death of spouse<marriage -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#death of spouse > interview
if (!is.null(d$yved) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$yved) & !is.na(d$yint) & d$yved>d$yint,T,F)
  if (any(not==T)) {
    print(paste("death of spouse>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
    if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#second union     <     first union
if (!is.null(d$ypartn2) & !is.null(d$ypartn)) {
  not<-ifelse(!is.na(d$ypartn2) & !is.na(d$ypartn) & d$ypartn2<d$ypartn,T,F)
    if (any(not==T)) {
    print(paste("2nd union<first union -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#second union <   first union disruption
if (!is.null(d$ypartn2) & !is.null(d$ydiss)) {
  not<-ifelse(!is.na(d$ypartn2) & !is.na(d$ydiss) & d$ypartn2<d$ydiss,T,F)
    if (any(not==T)) {
    print(paste("2nd union<first union disruption -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#2nd union > interview
```

```
if (!is.null(d$ypartn2) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ypartn2) & !is.na(d$yint) & d$ypartn2>d$yint,T,F)
    if (any(not==T)) {
    print(paste("2nd union>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}

#second marriage  <     first marriage
if (!is.null(d$ymarr2) & !is.null(d$ymarr)) {
  not<-ifelse(!is.na(d$ymarr2) & !is.na(d$ymarr) & d$ymarr2<d$ymarr,T,F)
    if (any(not==T)) {
    print(paste("2nd marriage<1st marriage -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#2nd marriage > interview
if (!is.null(d$ymarr2) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ymarr2) & !is.na(d$yint) & d$ymarr2>d$yint,T,F)
    if (any(not==T)) {
    print(paste("2nd marriage>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#second marriage  <     death of spouse
if (!is.null(d$ymarr2) & !is.null(d$yved)) {
  not<-ifelse(!is.na(d$ymarr2) & !is.na(d$yved) & d$ymarr2<d$yved,T,F)
    if (any(not==T)) {
    print(paste("2nd marriage<death of spouse -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#second marriage  <     divorce
if (!is.null(d$ymarr2) & !is.null(d$ydiv)) {
  not<-ifelse(!is.na(d$ymarr2) & !is.na(d$ydiv) & d$ymarr2<d$ydiv,T,F)
    if (any(not==T)) {
    print(paste("2nd marriage<divorce -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#first child      <     birth + 14
if (!is.null(d$ych1) & !is.null(d$ybirth)) {
  not<-ifelse(!is.na(d$ych1) & !is.na(d$ybirth) & d$ych1<d$ybirth+14,T,F)
    if (any(not==T)) {
    print(paste("1st child<birth + 14 -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
# 1st child > interview
if (!is.null(d$ych1) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ych1) & !is.na(d$yint) & d$ych1>d$yint,T,F)
    if (any(not==T)) {
    print(paste("1st child>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
```

```
}
#second child     <     first child
if (!is.null(d$ych2) & !is.null(d$ych1)) {
  not<-ifelse(!is.na(d$ych2) & !is.na(d$ych1) & d$ych2<d$ych1,T,F)
    if (any(not==T)) {
    print(paste("2nd child<1st child -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#2nd child > interview
if (!is.null(d$ych2) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ych2) & !is.na(d$yint) & d$ych2>d$yint,T,F)
    if (any(not==T)) {
    print(paste("2nd child>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#third child      <     second child
if (!is.null(d$ych3) & !is.null(d$ych2)) {
  not<-ifelse(!is.na(d$ych3) & !is.na(d$ych2) & d$ych3<d$ych2,T,F)
    if (any(not==T)) {
    print(paste("3rd child<2nd child -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#3rd child > interview
if (!is.null(d$ych3) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ych3) & !is.na(d$yint) & d$ych3>d$yint,T,F)
    if (any(not==T)) {
    print(paste("3rd child>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#fourth child     <     third child
if (!is.null(d$ych4) & !is.null(d$ych3)) {
  not<-ifelse(!is.na(d$ych4) & !is.na(d$ych3) & d$ych4<d$ych3,T,F)
    if (any(not==T)) {
    print(paste("4th child<3rd child -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
#4th child > interview
if (!is.null(d$ych4) & !is.null(d$yint)) {
  not<-ifelse(!is.na(d$ych4) & !is.na(d$yint) & d$ych4>d$yint,T,F)
    if (any(not==T)) {
    print(paste("4th child>interview -
noc:",sum(table(d$id[which(not)]))),quote=F)
  if (showid) print(c("Cases ID:",d$id[which(not)]),quote=F)
  }
}
print("____________________________________________",quote=F)
}
```

```
# CHKFILE ______________________________________________________________________

chkfile<-function(filename)
{
  print("____________________________________________",quote=F)
  print ("Check available data", quote=F)
  d<-read.table(file=filename, header=TRUE, sep="\t",na.strings="NA",dec=".")
  k<-0
  if (is.null(d$id) | all((names(d)== "id")==F)) {
      print("WARNING: id missing")
      k<-1}
  if (is.null(d$weight) | all((names(d)== "weight")==F)) {
      print("WARNING:weight missing",quote=F)
      k<-1}
  if (is.null(d$ybirth) | all((names(d)== "ybirth")==F)) {
      print("WARNING:ybirth missing",quote=F)
      k<-1}
  if (is.null(d$mbirth) | all((names(d)== "mbirth")==F)) {
      print("WARNING:mbirth missing",quote=F)
      k<-1}
  if (is.null(d$yint) | all((names(d)== "yint")==F)) {
      print("WARNING:yint missing",quote=F)
      k<-1}
  if (is.null(d$mint) | all((names(d)== "mint")==F)) {
      print("WARNING:mint missing",quote=F)
      k<-1}
  if (is.null(d$ypartn) | all((names(d)== "ypartn")==F)) {
      print("WARNING:ypartn missing",quote=F)
      k<-1}
  if (is.null(d$mpartn) | all((names(d)== "mpartn" )==F)) {
      print("WARNING:mpartn missing",quote=F)
      k<-1}
  if (is.null(d$ymarr) | all((names(d)== "ymarr")==F)) {
      print("WARNING:ymarr missing",quote=F)
      k<-1}
  if (is.null(d$mmarr) | all((names(d)== "mmarr" )==F)) {
      print("WARNING:mmarr missing",quote=F)
      k<-1}
  if (is.null(d$ypartn2) |all((names(d)== "ypartn2")==F)) {
      print("WARNING:ypartn2 missing",quote=F)
      k<-1}
  if (is.null(d$mpartn2) |all((names(d)== "mpartn2" )==F)) {
      print("WARNING:mpartn2 missing",quote=F)
      k<-1}
  if (is.null(d$ych1) |all((names(d)== "ych1")==F)) {
      print("WARNING:ych1 missing",quote=F)
      k<-1}
  if (is.null(d$mch1) |all((names(d)== "mch1")==F)) {
      print("WARNING:mch1 missing",quote=F)
      k<-1}
  if (is.null(d$ych2) |all((names(d)== "ych2")==F)) {
      print("WARNING:ych2 missing",quote=F)
      k<-1}
  if (is.null(d$mch2) |all((names(d)== "mch2")==F)) {
      print("WARNING:mch2 missing",quote=F)
      k<-1}
  if (is.null(d$ych3) |all((names(d)== "ych3")==F)) {
      print("WARNING:ych3 missing",quote=F)
      k<-1}
  if (is.null(d$mch3) |all((names(d)== "mch3")==F)) {
      print("WARNING:mch3 missing",quote=F)
      k<-1}
```

```
  if (is.null(d$ych4) |all((names(d)== "ych4")==F)) {
      print("WARNING:ych4 missing",quote=F)
      k<-1}
  if (is.null(d$mch4) |all((names(d)== "mch4")==F)) {
      print("WARNING:mch4 missing",quote=F)
      k<-1}
  if (is.null(d$ydiv) |all((names(d)== "ydiv")==F)) {
      print("WARNING:ydiv missing",quote=F)
      k<-1}
  if (is.null(d$mdiv) |all((names(d)== "mdiv")==F)) {
      print("WARNING:mdiv missing",quote=F)
      k<-1}
  if (is.null(d$yved) |all((names(d)== "yved")==F)) {
      print("WARNING:yved missing",quote=F)
      k<-1}
  if (is.null(d$mved) |all((names(d)== "mved")==F)) {
      print("WARNING:mved missing",quote=F)
      k<-1}
  if (is.null(d$ymarr2) |all((names(d)== "ymarr2")==F)) {
      print("WARNING:ymarr2 missing",quote=F)
      k<-1}
  if (is.null(d$mmarr2) |all((names(d)== "mmarr2")==F)) {
      print("WARNING:mmarr2 missing",quote=F)
      k<-1}
  if (is.null(d$yexit) |all((names(d)== "yexit")==F)) {
      print("WARNING:yexit missing",quote=F)
      k<-1}
  if (is.null(d$mexit) |all((names(d)== "mexit")==F)) {
      print("WARNING:mexit missing",quote=F)
      k<-1}
  if (is.null(d$ydiss) |all((names(d)== "ydiss")==F)) {
      print("WARNING:ydiss missing",quote=F)
      k<-1}
  if (is.null(d$mdiss) |all((names(d)== "mdiss")==F)) {
      print("WARNING:mdiss missing",quote=F)
      k<-1}
  if (is.null(d$sex) |all((names(d)== "sex")==F)) {
      print("WARNING:sex missing",quote=F)
      k<-1}
  if (all((names(d)== "sex")==T) & any(is.na(d$sex))) {
      print ("WARNING:missing data in variable SEX",quote=F)
      k<-1}
  if (is.null(d$edu) |all((names(d)== "edu")==F)) {
      print("WARNING:edu missing",quote=F)
      k<-1}
  if (all((names(d)== "edu")==T) & any(is.na(d$edu))) {
      print("WARNING:missing data in variable EDUCATION",quote=F)
      k<-1}
  if (k==0) print (paste("File",filename,"checked: OK"),quote=F)
print("_____________________________________________",quote=F)
}
```