

The Sequence of Occurrences of the Starting Socio-Demographic Events in the Life Course of Russians

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The life course of an individual consists of a set of different events, which may happen sequentially or immediately. It is difficult to explore this multiplicity of “clocks”¹ (marriage, reproductive, labor, educational, etc.) by conventional methods, whereby the events are analyzed either individually or in small groups. The transition to the study of event chains makes it possible to achieve a new level of understanding of the structure of individuals' lives. An advanced method known as Sequence Analysis (SA) helps demographers and sociologists to achieve this aim (Aisenbrey and Fasang 2010; F. C. Billari 2001; Abbott and Tsay 2000; Aisenbrey and Fasang 2007; F. Billari and Piccarreta 2005).

The behavior of Russians in socio-economic and demographic spheres has undergone many changes over the past decade (Frejka and Zakharov 2012; Mitrofanova 2013; Mitrofanova and Artamonova 2014; Zakharov 2008). It is visible especially in terms of the transformation of life course starting events, as these changes appear in the biographies of young people most quickly and help to define the difference between generations before the completion of reproduction, marriage and other “careers”.

In this paper, the biographies of Russians were studied through SA. We also promote the author's approach to data visualization using Lexis grids.

The study was performed on a panel of the Russian part of the “Generations and Gender Survey” (GGS: 2004, 2007, 2011). The subsample consists of 4,857 respondents (32% men and 68% women).² It has been taken across five 10-year generations of 1935-1984 years of birth. Based on empirical data and existing classifications, we define the cohorts of 1935-1974 years of birth as “Soviet generations” (those who socialized in the Soviet Union), and cohorts of 1975-1984 years of birth as “modern generations”.

We analyzed starting life course events which were grouped into three dimensions (corresponding statuses are in parentheses): the presence of children (no children, first child), marital status (single, first cohabitation, first marriage), socio-economic status (no events, first separation from parents, first job, completed education of the highest level). The number of combinations of statuses is very high, so in order to reduce their amount, we focused only on the first event in pairs of socio-economic events, and on the last one in the triple events. The list of determined statuses is shown in Figure 1. Grey color indicates censored events which have not yet occurred at the time of the survey. The censoring is possible because the representatives of the youngest generation are 27-36 years old, so only two cohorts of ten (from this generation) can have events at the age of 35.

¹ “Multiple clocks” is a term of the Life Course concept which includes the notion of a life as a set of different spheres, each of which has its own timing (Mills 2000).

² The gender imbalance is due to the “rash” of the sample and the inability to correct the panel data by weights.

Socio-economic events	Demographic events					
	no children			1 st child		
	single	1 st cohabitation	1 st marriage	single	1 st cohabitation	1 st marriage
no events or one event	no events					
	separation from parents					
	job					
	education					
separation from parents > some event						
job > some event						
education > some event						
2 events concurrently						
2 events > separation from parents						
2 events > job						
2 events > education						
3 events concurrently						
censoring						

Figure 1. Groups of statuses

Using the information on the data occurrences, we reconstructed the segments of the respondents' biographies. We created statuses for each month from age 15 to age 35 for each respondent. We chose the age of 15 as the margin of childhood and capped the observation period at the age of 35 to equalize the chances of different generations in terms of the events occurring, and to exclude marginal cases (since the first events most likely occur in the first half of life).

We obtained the frequency distribution of occurrences of different statuses at any given time for each generation; this distribution became the framework for building chronograms representing these frequencies for men (Fig. 2) and for women (Fig. 3). Presented chronograms were placed on Lexis grids, thus allowing for comparison across the three time dimensions: the X-axis – the calendar date, the Y-axis – age, and the diagonal – generation. The X-axis represents the proportion of delayed status at each particular time inside the corridors of each generation; the Y-axis depicts ages from 15 to 35 years.

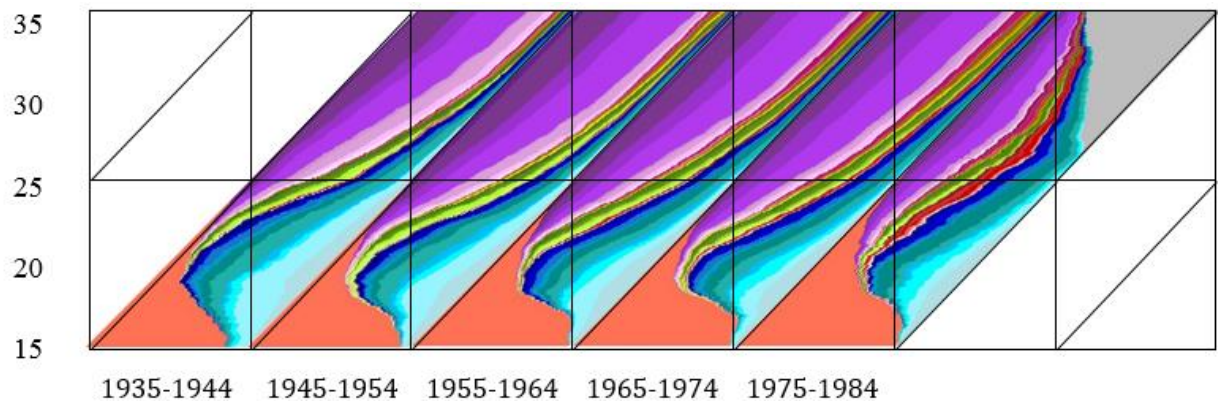


Figure 2. Chronograms for men of 1935-1984 years of birth

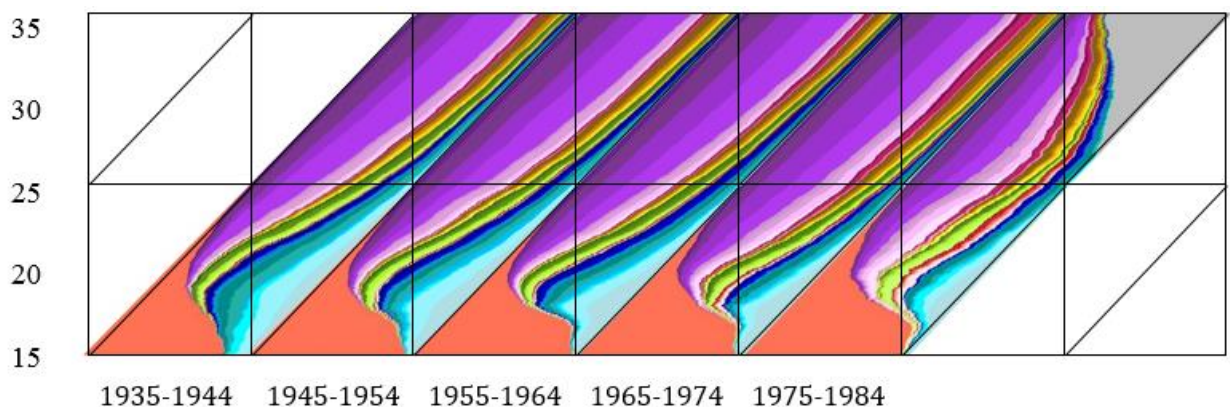


Figure 3. Chronograms for women of 1935-1984 years of birth

We can make the following observations according to the data depicted on the chronograms. The form of the start of biographies (the “neck”, from which the colors appear) indicates that, at the age of 15, the older generations had a much larger number of events than the younger generations; for older generations, such events were mainly socio-economic, while young generations face more demographic ones. Almost 90% of men of the older generations experience exclusively socio-economic events (blue palette) by the age of 20. By about the same age, men of other generations begin to acquire demographic events, but only 70-80% of them have socio-economic ones. Women begin demographic careers two years earlier and have approximately 35-65% of socio-economic events by this age.

At the age of 35, 70-95% of men born in 1935-1974 are married and have at least one child (purple palette), while among women from similar generations there are less than 80% with such statuses, and 8% are in cohabitation with a child (pink palette). There are 10-20% of women who have a child and are not married or cohabiting (yellow colors). In contrast, a man with a child is almost always a man in a relationship. Among the men and women of the younger generations, there are only 10% of those who are married and have a child, but these representatives have had very few other events, because only a small portion of the respondents have reached the age of 35. For both sexes, when we move to younger generations, there is tendency towards reduction in the share of those who are married and an increase in the share of those who are in cohabitation.

All generations include respondents who do not have any demographic event by the age of 35, but their share does not exceed 5%. The most popular final socio-demographic event men achieve at the age of 35 is the first separation from their parents; a bit less popular is education. The first job started to compete with education only for the generation of 1965-1974 years of birth. For Soviet women, there is an identical structure to the final socio-economic events, but, starting from the generation of 1955-1964 years of birth, the shares of each event will turn out to be equal. To clarify these statements, we placed the chronograms of the individual biographies of respondents, sorted “from the end”, in Appendix 1.

In order to represent the following part of the results, we need to specify the spelling of each status in coding (Appendix 2). There are the mean durations of states in Table 1. We included in this table only the events which lasted three or more months. The demographic events are indicated by bold print.

Table 1. Mean durations of states for both sexes, men, women

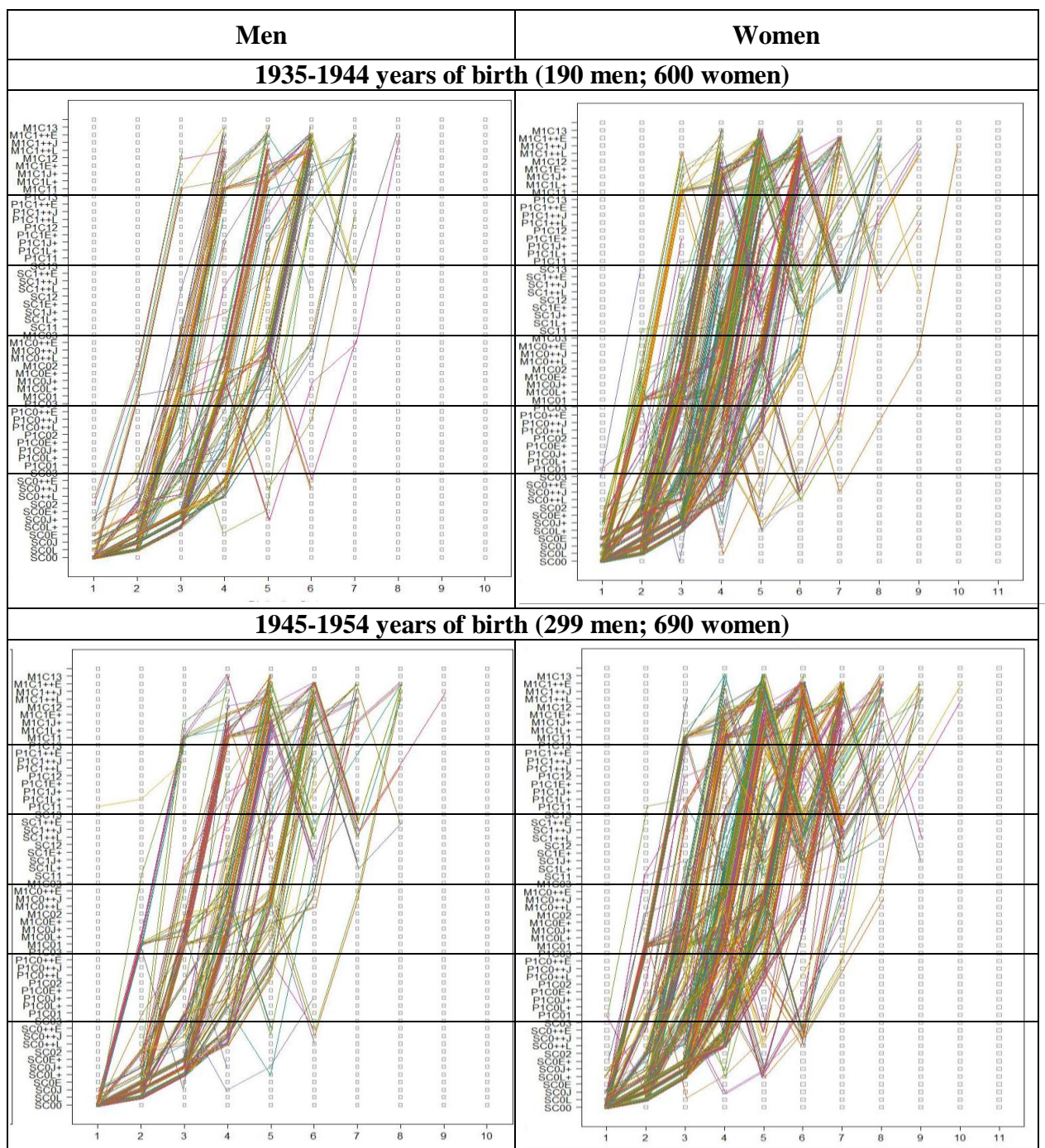
#	Both sexes		Men		Women	
	Status	Duration, months	Status	Duration, months	Status	Duration, months
1	SC00	34.0	SC00	36.2	M1C1++L	33.6
2	M1C1++L	33.7	M1C1++L	34.1	SC00	33.0
3	M1C1++J	23.5	M1C1++E	19.5	M1C1++J	26.0
4	M1C1++E	20.5	M1C1++J	18.1	M1C1++E	21.0
5	SC0J	10.0	SC0J	12.1	M1C1J+	9.5
6	M1C1J+	9.3	SC0J+	11.7	SC0J	9.0
7	SC0L	8.8	SC0E+	10.4	SC0L	8.5
8	SC0J+	8.6	SC0L	9.5	SC0J+	7.1
9	SC0E+	8.1	M1C1J+	9.0	SC0E+	7.0
10	M1C13	5.9	SC0++J	6.7	M1C13	6.8
11	M1C1L+	5.8	SC0++L	6.1	M1C1L+	6.2
12	SC0++J	5.6	SC0E	5.5	SC0++J	5.0
13	M1C1E+	4.4	SC0L+	4.9	M1C1E+	4.8
14	M1C0++L	4.1	M1C1L+	4.8	SC1++L	4.7
15	SC0L+	4.0	M1C0++L	4.4	M1C0++L	4.0
16	SC0++L	3.9	SC0++E	4.0	SC0L+	3.5
17	SC0E	3.8	M1C13	3.9	SC1++E	3.5
18	SC1++L	3.7	M1C1E+	3.7	M1C11	3.5
19	SC0++E	3.5	M1C0++J	3.4	SC0++E	3.3
20	M1C11	3.3	SC02	3.2	SC1++J	3.2
21	M1C0++J	3.0			SC0E	3.0

The mean duration of an average event for both sexes is 5.7 months: for men it is 7.6 months, and for women it is 4.8 months. The ranking shows that the longest state for men (more than 3 years) is an absence of events of all types. The second one (less than 3 years) is first marriage, first child and all the three events, the third of which is leaving the parental home. For women, we have the opposite situation, but the difference between the duration of the events is less than a month.

The next two events are also the same for men and women, but they appear in opposite succession. Men have all the events, with the last one – education – for more than a year and a half and the last one – the first job – for a period of a month shorter. Women are staying longer in the same statuses, but the longest one ends with the first job (more than 2 years), the next one – with education (less than 2 years).

Other statuses are incomplete (respondents do not have the events of all the types) and the duration of events is less than a year. Nevertheless, we revealed that women stay in demographic statuses longer than men.

In Figure 4, there are so called “parallel coordinates” which indicate the transitions of respondents from one status to another. The X-axis represents the number of transitions, the Y-axis depicts each possible status from SC00 (no events) to M1C13 (1st marriage, 1st child, all socio-economic events). The horizontal lines are dividing different groups of statuses from each other.



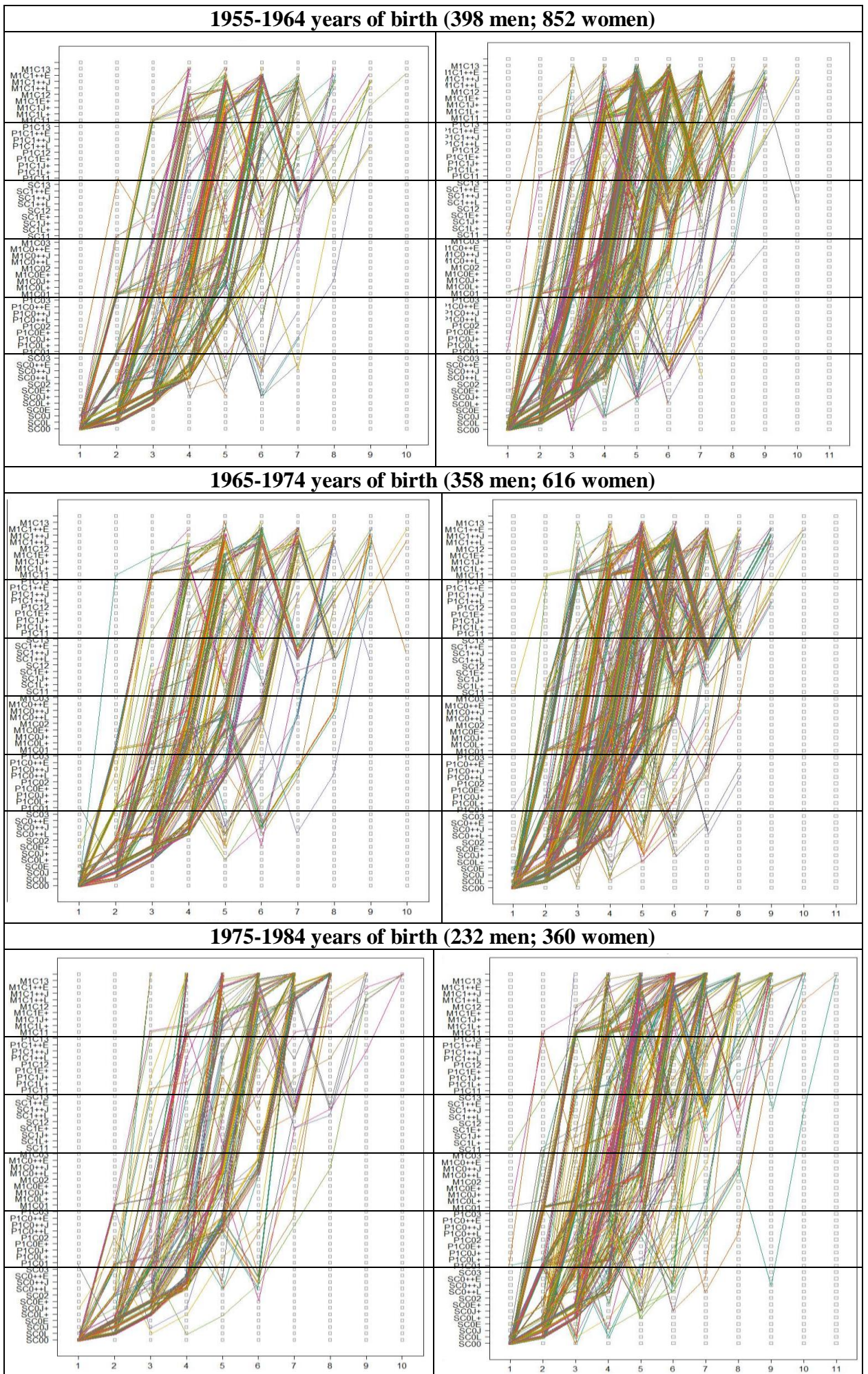


Figure 4. "Parallel coordinates" for men and women of each generation

Due to the imbalance between the number of men and women, there is much more information for women than for men, though this does not affect the results: the typical transitions are seen in both cases. The first transition (from status one to status two) is often from the position with no statuses to some socio-economic positions. Sometimes we can see individuals gaining a marriage or a partnership. The trend of all the graphs is a sharp rise, so people are achieving demographic statuses relatively rapidly. The “speed” is slowing in modern generations, especially among men: they are entering their marriage “careers” only after third step.

The most frequent subsequences are listed in Table 2. We have information for both sexes, men and women. We excluded the subsequences with a support (the amount of people of a group, who have the subsequent) of less than 10%.

Table 2. Frequencies of appearances of subsequences for both sexes, men and women

#	Both sexes			Men			Women		
	Subsequence	Support	Count	Subsequence	Support	Count	Subsequence	Support	Count
1	(SC00)	91%	4438	(SC00)	93%	1441	(SC00)	90%	2997
2	(SC00>SC0J)	27%	1306	(SC00>SC0J)	29%	453	(SC00>SC0J)	26%	853
3	(SC00>SC0L)	25%	1208	(SC00>SC0E)	27%	415	(SC00>SC0L)	25%	828
4	(SC00>SC0E)	23%	1120	(SC00>SC0L)	25%	380	(SC00>SC0E)	21%	705
5	(SC0E>SC0E+)	20%	956	(SC00)- (SC0E>SC0E+)	23%	357	(SC0L>SC0L+)	19%	632
6	(SC0L>SC0L+)	19%	946	(SC0J>SC0J+)	23%	354	(SC0E>SC0E+)	18%	590
7	(SC0J>SC0J+)	19%	929	(SC0L>SC0L+)	20%	314	(SC0J>SC0J+)	17%	575
8	(SC00)- (SC0E>SC0E+)	18%	886	(SC00)- (SC0J>SC0J+)	20%	313	(SC00)- (SC0L>SC0L+)	17%	548
9	(SC00)- (SC0L>SC0L+)	17%	835	(M1C0++L> M1C1++L)	19%	295	(M1C0++L> M1C1++L)	16%	532
10	(M1C0++L> M1C1++L)	17%	827	(SC00)- (SC0L>SC0L+)	19%	287	(SC00)- (SC0E>SC0E+)	16%	529
11	(SC00)- (SC0J>SC0J+)	17%	826	(SC00)- (M1C0++L> M1C1++L)	17%	269	(SC00)- (SC0J>SC0J+)	15%	513
12	(SC00)- (M1C0++L> M1C1++L)	15%	726	(SC00)- (M1C0++J> M1C1++J)	10%	152	(SC00)- (M1C0++L >M1C1++L)	14%	457
13	(SC00)- (M1C0++J> M1C1++J)	11%	511				(SC00)- (M1C0++J> M1C1++J)	11%	359
14	(M1C0J+> M1C1J+)	10%	464				(SC0L>SC0L+) -(SC0L+> SC0++J)	10%	323
15							(M1C01> M1C11)	10%	318

The table shows that women have more events with a support of more than 10%, but the percentage of people in socio-economic statuses is more common among men than women. The majority of respondents (90%) have the subsequence when there are no events. This means that 10% of people have some events at the age of 15. The next popular subsequences (more than 20% each) are transitions from no-events status to the first job, education and leaving parents. 19% of men and 16% of women have a subsequence, which includes demographic events: it is a transition from “the first marriage without children, but with all the socio-economic events (last is leaving parents)” to “the first marriage with the first child, and with all the socio-economic events (last is leaving parents)”.

In conclusion, this paper illuminates how men and women from different generations gaining their first demographic and socio-economic events. We represented the individual biographies on chronograms, the status transitions on parallel coordinate plots and the durations of statuses and the frequencies of subsequences on tables.

Our analysis reveals the changes between sexes and generations. Men devote a significant part of their youth to achieving socio-economic events, while women much earlier and more actively initiate their demographic careers. Nevertheless, by the age of 35, there are more respondents

among men who have children and relationships than men who do not face such events. Young people, compared to older generations, much more actively enter into cohabitations and have children in them, but they delay the onset of all these events, especially childbearing, to later ages.

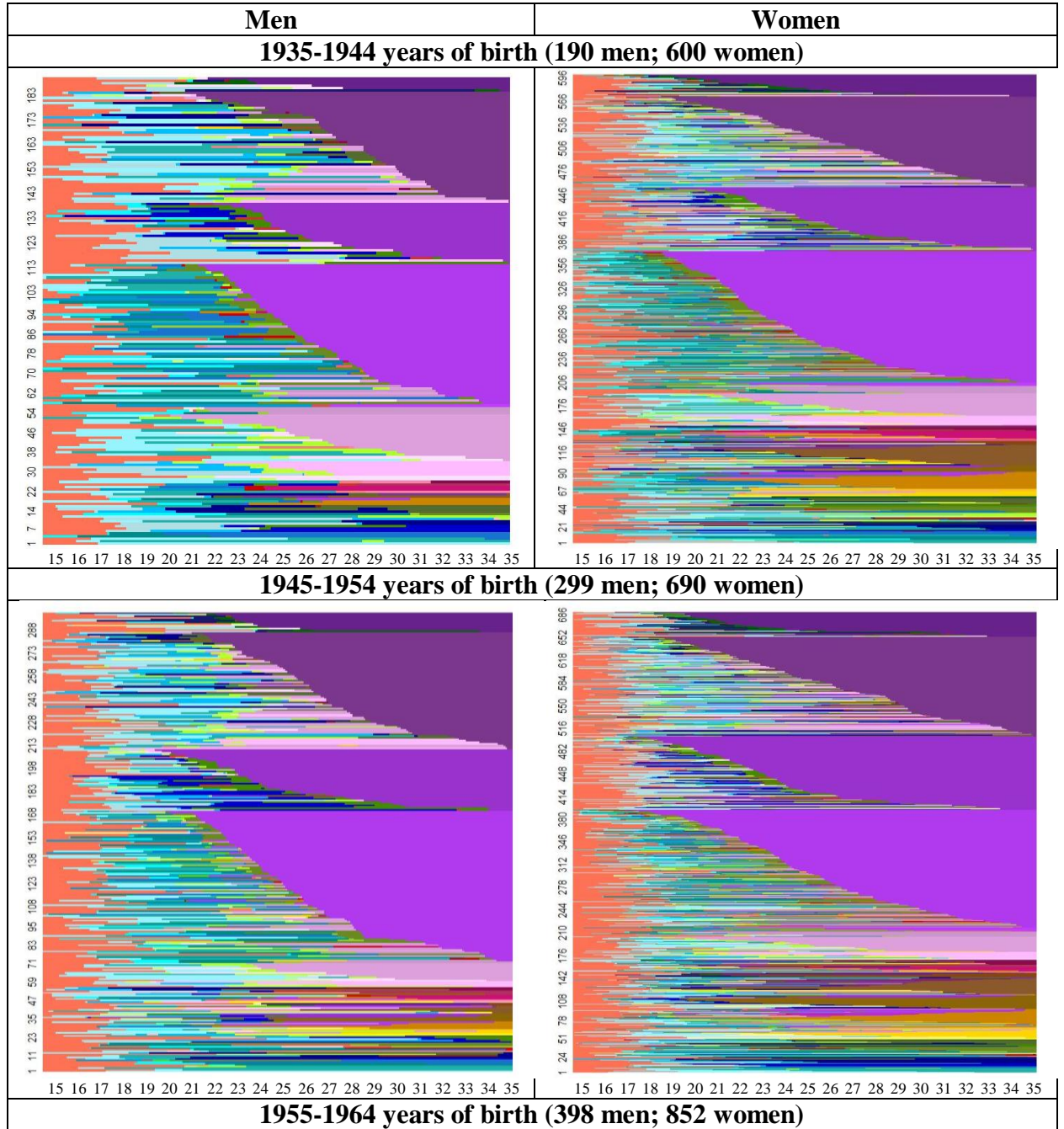
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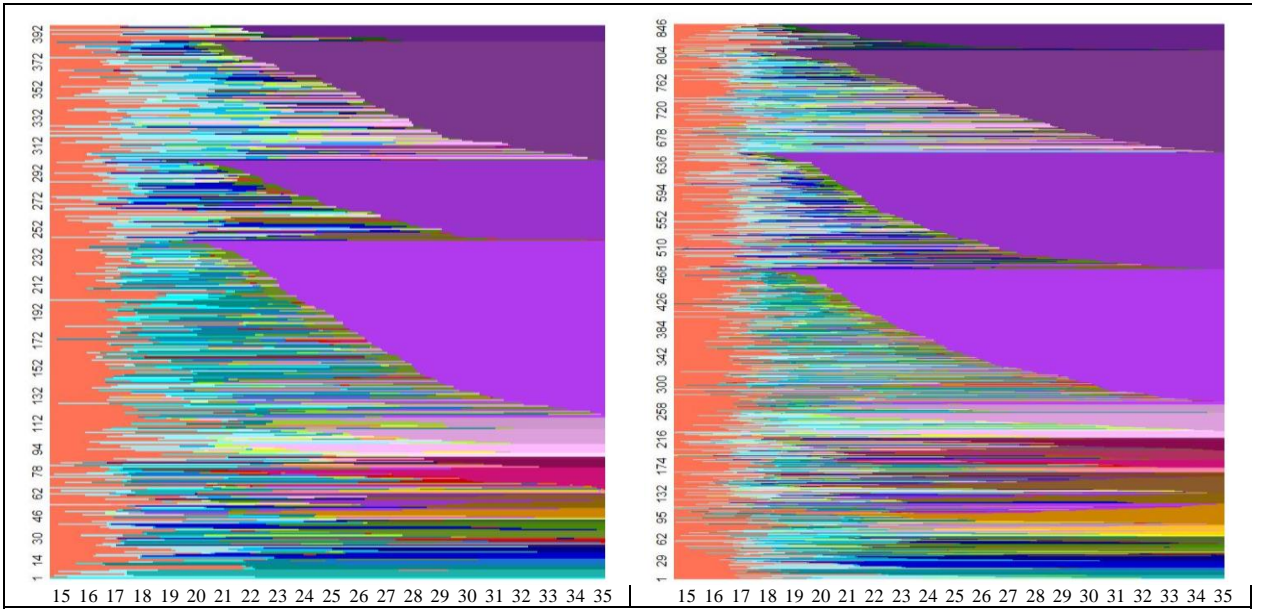
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APPENDIX

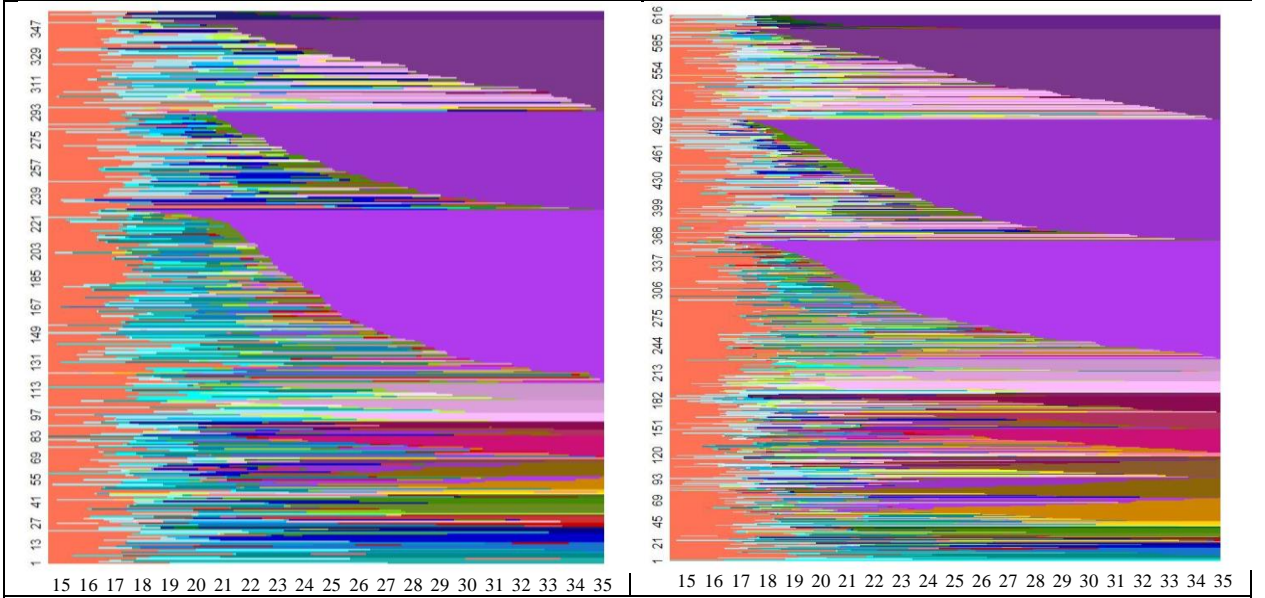
Appendix 1. Individual biographies of the respondents sorted “from the end”.

The biographies of all the respondents, who were sorted “from the end” (i.e. from the last event in the segment of the biography), are displayed below. We chose this medium of presentation to fix the sets of the first events which people of different sexes and generations experienced at the age of 35. In addition, we can trace the individual tracks to the final events.

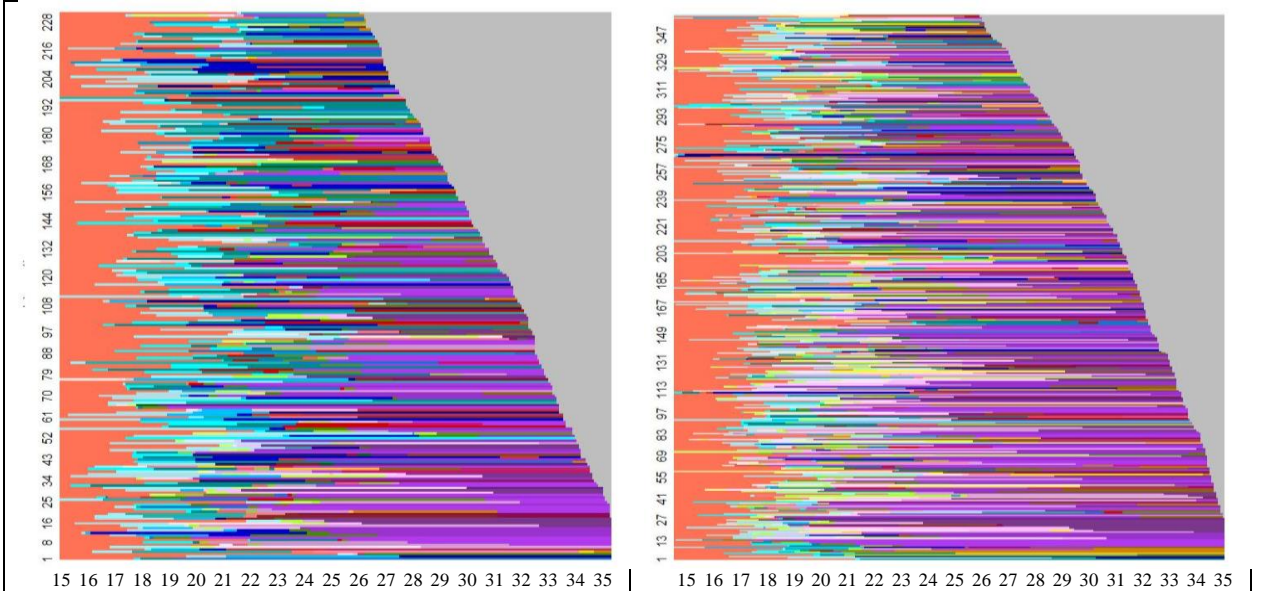




1965-1974 years of birth (358 men; 616 women)



1975-1984 years of birth (232 men; 360 women)



Appendix 2. The letter names of statuses

Socio-economic events	Demographic events					
	no children			1 st child		
	single	1 st cohabitation	1 st marriage	single	1 st cohabitation	1 st marriage
no events or one event	SC00	P1C01	M1C01	SC11	P1C11	M1C11
	SC0L					
	SC0J					
	SC0E					
separation from parents > some event	SC0L+	P1C0L+	M1C0L+	SC1L+	P1C1L+	M1C1L+
job > some event	SC0J+	P1C0J+	M1C0J+	SC1J+	P1C1J+	M1C1J+
education > some event	SC0E+	P1C0E+	M1C0E+	SC1E+	P1C1E+	M1C1E+
2 events concurrently	SC02	P1C02	M1C02	SC12	P1C12	M1C12
2 events > separation from parents	SC0++L	P1C0++L	M1C0++L	SC1++L	P1C1++L	M1C1++L
2 events > job	SC0++J	P1C0++J	M1C0++J	SC1++J	P1C1++J	M1C1++J
2 events > education	SC0++E	P1C0++E	M1C0++E	SC1++E	P1C1++E	M1C1++E
3 events concurrently	SC03	P1C03	M1C03	SC13	P1C13	M1C13
censoring						