

CHAPTER 3

DATA AND METHODS

THE DATA SET

The basis for the analysis in this thesis is the Rendalen Database. The database was initially established for a project by Sølvi Sogner for a study of the mortality decline. However, when the project started in 1998 many of the sources had already been available in a digitalised form by Lars Nygård. The basis of the database is parish registers from 1734-1900. The parish registers consist of records of baptisms, burials, marriages, confirmations, stillbirths and from 1814 of records of in- and out migration and of vaccination against smallpox. In addition there are several other sources such as censuses, probate registers and court journals. All tables were put into a relational database, Access.⁴³

Following Louis Henry's family reconstitution method all persons were connected to the family of origin.⁴⁴ The basic idea is to connect a baptised child to the marriage of the parents, and in this way create siblings-groups. But not only baptised children are assigned to a family of origin. I have attempted to assign every person appearing in Rendalen to a family originating in Rendalen. In practice the process of connecting a person to the family of origin was performed by assigning a family number to each person. The linkage process is described schematically in Figure 4.

The wedding list is based on the recorded weddings in the parish registers. However, not every couple is recorded married in Rendalen. In several cases we have records of children being born without any recorded marriage of their parents. The clergymen would denote a child born by unmarried couples as 'illegitimate'. Both parents of illegitimate children were firmly recorded in the parish registers,⁴⁵ and in the cases where the couple did

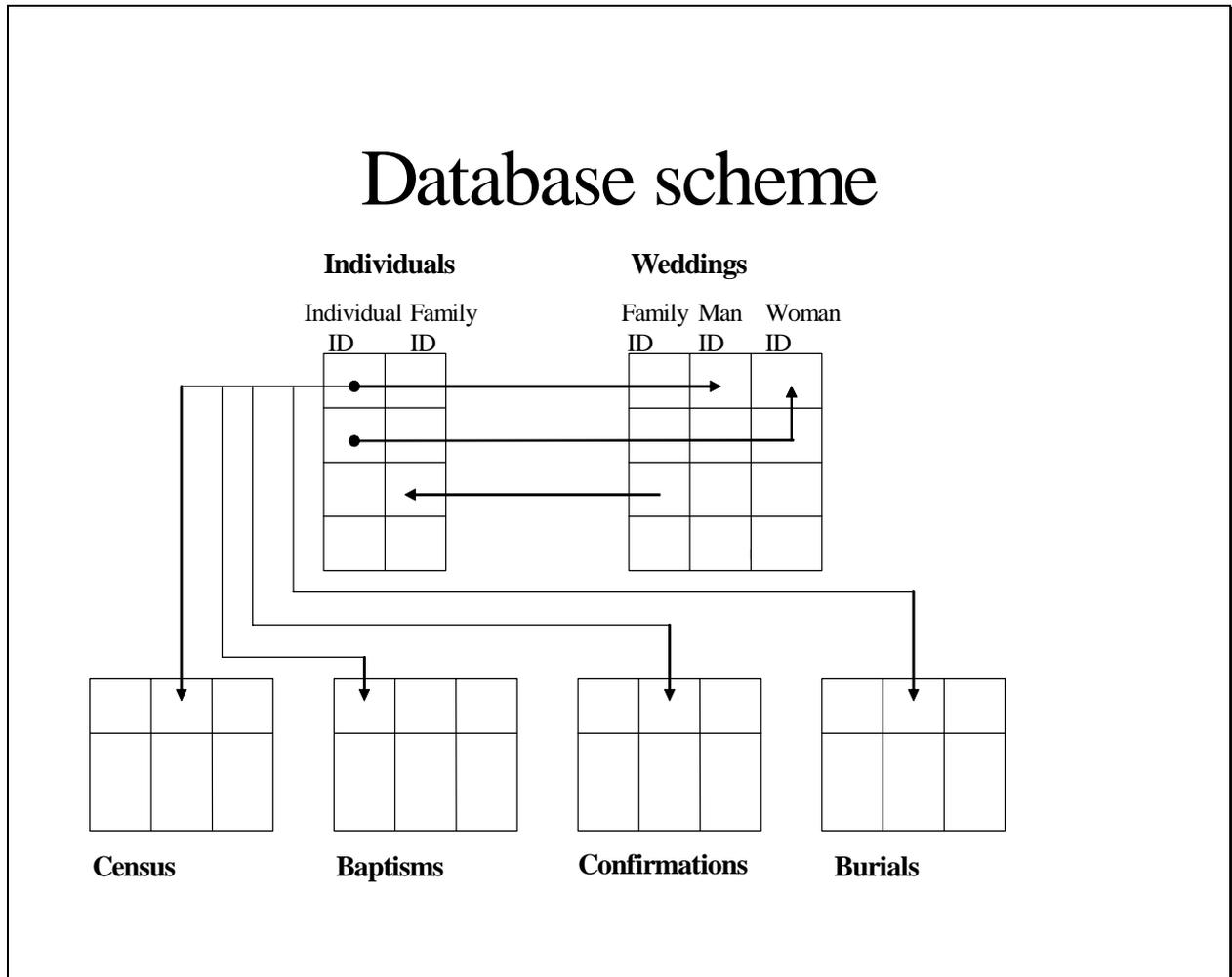
⁴³ A description of the database and its construction is found in Gjelseth, "Relasjonsdatabaser som verktøy"

⁴⁴ Louis Henry, *Techniques d'analyse en démographie historique*, Paris, 1980. Used here are the principles of the technique as described in Ståle Dyrvik, *Historisk demografi*, Bergen, 1983, pp. 93-117.

⁴⁵ In two out of 85 court cases for illegitimacy in the years between 1763 and 1797 only two assigned fathers denounced their parenthood. One of these was Knud Eriksen Hornset, who had a child with his fiancé just a month before the child in question was born, and married her the month after. In the 19th century there are a few assumed cases where the parish sheriff (lensmann) Abraham Enevoldsen managed to assign other fathers to his own illegitimate children. All in all it seems likely that the fathers recorded in the parish registers are the actual fathers, and in our practice we have used the fathers that have been recorded in the register.

not marry each other at a later stage, a new entry into the wedding list of so called “natural marriages” have been created.

Figure 4. *Database scheme of the structure of family reconstitution and record linkage in the Rendalen database.*⁴⁶



At the start of the parish registers where only the baptism of a ‘legitimate’ child is observed, one can safely assume that the marriage has taken place before the registration started. In these cases marriages and families have been created based on the information provided in the records of baptisms. This has also been the case for families that have moved into the parish after the marriage. Families have not only been created from the recordings of baptisms. Wherever a report of a marriage or family has been found, for example in censuses or probate registers, a record has been created in the wedding table.

⁴⁶ This scheme is a slight revision of the one developed in Gjelseth, “Relasjonsdatabaser som verktøy”, p. 68.

In the 19th century the linkages and establishment of family connections have usually been a straight forward procedure since the information recorded in the parish registers is plentiful. Recordings of age or even date of birth and patronymic that did not change over the life course makes linkages fairly easy. For the 18th century, however, information is often more sparse and here the linkage process sometimes seems never to end. Even until the very end of this project small adjustments have been made to the linkages based on new information from other sources made available. In the record linkage process local histories of farms and genealogies have often been consulted.⁴⁷

Each person appearing in the different tables was also linked together by given a unique person number. In this way one can follow a person from birth, through confirmation, marriage and eventually death. In addition the individuals are linked to several other sources. All these linkages make it possible to follow families and individual life stories, and it functions as a population register. An overview of the sources in the database is presented in Table 1.

These linkage processes have also made it possible to control the quality of the sources, both the original parish registers and the transcribed version of it. One advantage of the linkage has been the possibility of identifying persons not included in a specific register. This has for example been children not being baptised and only registered as buried, or the ability to decide whether a child have died by the fact that it disappears from the sources while a new child is seen baptised with the same name. It was usual to give a new child the name of a deceased sibling. All in all the quality of the sources can be characterised as very good. The degree of linkage between the different registers is high, as can be seen from the proportion of peoples in the censuses that also has been linked to one or more events in the parish registers.⁴⁸ There are generally a high proportion of linkages between the different tables. This is not only due to the high quality of the sources and months spent on linking persons, but also the fairly stable population in Rendalen. There was a quite slow turnover of people in Rendalen compared to other more central areas in Europe and even Norway. In Rendalen we are actually studying the *reconstitutionable majority*.

⁴⁷ Jacob Breda Bull, *Øvre Rendal. Gårdenes og slektenes historie*, Oslo, 1940, Odd Nytrøen, *Ytre Rendal. Gard og ætt*, Elverum, 1970, Ottar Andersen (ed.), *Bygdebok for Engerdal*, Bind I-III, Elverum, 1969.

⁴⁸ See also Gjelseth, "Relasjonsdatabaser som verktøy" for a further assessment of the sources.

Table 1. *Overview of records in the Rendalen database*

Records	Year(s)	# of cases	Linked	Comments
Civil registration				
Buried	1733-1900	5519		
Baptized	1733-1900	10181		
Married (church)	1733-1900	2172		
Married (civil)	1856-1900	5		
Confirmed	1736-1900	6280		missing 1780-86, grades given 1789-1900
Migrants	1791-1816	29		only young men
Out-migrants	1816-1900	1428		
In-migrants	1816-1900	488		
Emigrants (overseas)	1868-1900	860		
Stillborn	1803-1817	17		
	1829-1900	250		
Introduction after birth	1750-1787	57		
Vaccinated (smallpox)	1814-1867	3086		
Censuses				
Extra tax	1762	984	97.5 %	>12 years
Census	1801	1680	97.1 %	
Census	1865	3171	94.5 %	
Census	1875	3428	90.1 %	de jure
Census	1900	3722	93.4 %	de jure
Census	1910	4019		
Migrants in census (birthpl.)	1865	406		
Migrants in census (birthpl.)	1875	209		only parts of Norway
Migrants in census (birthpl.)	1900	654		
Farm registers				
Register of landed property	1723	113		including inland fisheries
Register of landed property	1838	216		
Register of landed property	1886	744		
Register of landed property	1903	1001		
Farm tax	1802	159		
Census (farms)	1825	161		
Census (farms)	1845	226		
Other				
Court journals (farms)	1730-1820	2940		from court books
	1801-1896	9204		from case registers, includes duplicates
Court journals (civil and public cases)	1763-1797	710		not linked
Military rolls	1821-1854	914		
Probate registers	1675-1893	747		335 includes information on distribution of inheritance

ESTABLISHING THE POPULATION AT RISK OF GETTING MARRIED USING FAMILY RECONSTITUTION

In two of the articles in this dissertation I have adopted an event history analysis using logistic regression and discrete time to calculate differences in the risk of experiencing a demographic event, most notably getting married (see Article 2 and Article 3).⁴⁹ In these analyses I am only considering never-married persons between 17 and 40 years of age with parents from Rendalen, and I am referring to this group in the following account. A comprehensive work has been performed to organise the database in a way that has made this possible. As for other event-history studies, the greatest problem has been to identify who and for how long individuals were under risk of experiencing the specific event. In addition, in reconstitution studies we are only able to observe people when they are subjected to demographic or other events that are recorded by the clergymen or state officials.⁵⁰ Some descriptions of how the population at risk is created are therefore necessary.

First, I assume that the young men and women are under observation between two recorded events. For example, if I observe a person at confirmation and the next time at marriage I assume that the person has been under the risk of getting married the whole time. In most cases the person would have been in Rendalen during this period. Population movement to and from Rendalen were small or mostly over short distances, to the neighbouring parishes, at least until the end of the 19th century. The vital event of getting married also gives support to this assumption. Young men and women could be in another parish working as servants, and still be under the risk of getting married in Rendalen. A couple from Rendalen might already have decided on a marriage but in order to build a nest egg to establish an independent household, they would work outside the parish for a couple of years, and then return in order to marry. If we had perfect information about migration we would have censored (excluded from further analysis) the person at the time of migration, while including him or her as being under risk at the time of return, although the person was de facto planning to marry in the parish the whole time. This could have created biases towards people needing to go into service or living at the outskirts of the parish.

⁴⁹ Event history analysis using discrete time is described in Paul D. Allison, *Event History Analysis: Regression for Longitudinal Event Data*, Newbury Park, CA, 1984, pp. 9-22.

⁵⁰ Family reconstitution as a form of event-history analysis is described by Gutman and Alter in "Family Reconstitution as Event-History Analysis", pp. 159-180.

A second problem connected to the first one is to determine when a person is no longer under the risk of getting married. It is straightforward to censor the life histories at death and at the census of 1900. The largest censoring problem occurs with migration. The records of migration are limited, but in the parish registers there exist records of migration after 1816, and after 1868 we have some registration of emigration taken from emigration records from the largest ports in Norway.⁵¹ The recording of migration in the parish registers is actually records of certificates that the clergymen issued to people migrating. Ståle Dyrvik states that persons migrating on a permanent basis made sure that they had certificates for baptism, confirmation, marriage, communion or conduct.⁵² Using the migration record is therefore a good way to censor people, declaring them not longer under the risk of getting married in Rendalen. Half of the 645 unmarried persons between 17 and 40 getting a certificate were heading for America. When we include the additional persons in the emigration registers, a total of 436 persons are censored when moving to America (see Table 2).

Some 60 persons encountered in the migration records later appear in Rendalen. Many of these were conscripts serving in other districts, often in the city of Trondhjem. Using the military records we can see that they were away usually for a year or so. They have not been censored at migration but treated as being under risk of marrying during the whole period.

Still, we are faced with some uncertainties by using the records of migration. There would be a problem if the registered migrants actually moved out to get married and therefore wanted a certificate. Then we would censor a person at the point in time when he had the largest probability of getting married. But this does not seem to be the case. Migration in connection with marriage would usually occur after the wedding. A married couple usually settled in the man's parish, and the local custom was to marry in the parish of the bride. The woman's marriage is therefore recorded.⁵³ However, there seems to be some cases where a person is given a certificate in order to get married somewhere else. In the registers there can sometimes be a substantial difference in time between when a certificate is issued and when a person is stated to have moved out. It has therefore been important to control that the date of migration actually is the time when a person was moving. Still in the migration records, the cause of migration is often listed, and in a very few cases it is stated that the person was

⁵¹ The records of emigration are taken from The digital archive, www.digitalarkivet.no

⁵² Dyrvik, *Historisk demografi*, p. 170

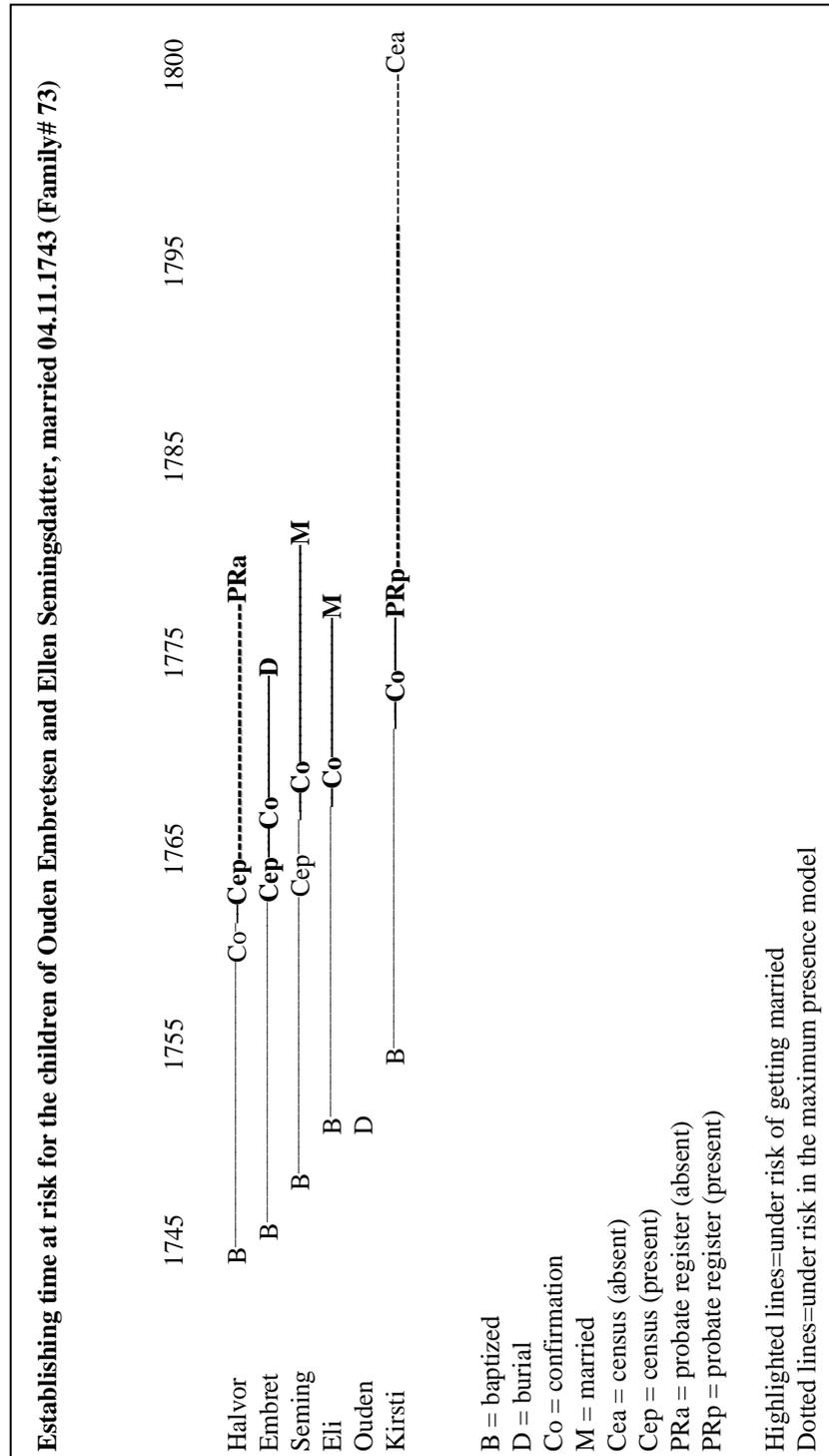
⁵³ For a further outline of these questions see below under "The event of getting married" and Article 1, "Deciding whom to marry", p. 52.

moving in order to get married. In these cases I will treat them as marrying at the date of migration.

Totally 735 persons are censored by using the records of migration and emigration. This can be compared to the 1001 persons from Rendalen who are not recorded migrating and just disappear from the database.⁵⁴ In the 18th century and also in the beginning of the registration of migration in the 19th century, very few persons are censored at migration, but for those born in the 1830s through the 1870s the migration records cover about 60% of those moving permanently. The 1001 persons disappearing from the register leave us with the problem that we have no date on which to censor their life stories. If a whole family is disappearing I have censored all of the children at the last known date when the family was still present in Rendalen. Usually these are families that move out when the children is still at a young age and most of the children are never considered under risk of getting married. For single persons I have tried to solve the problem by operating with two models. The first model censors the life histories at the last known event (indicating the minimum time a person is known to be present and under risk), and the second censors them the first time when we know the young people were no longer present, usually at the time of a census (the maximum length of time a person could be present).⁵⁵ In an analysis of the chance of getting married for both men and women between 1750 and 1900 the maximum presence assumption would add 20 % more person years compared to the minimum presence model (61955 compared to 74718). In fact, a large part of these added years occurs in the last quarter of the 19th century. Due to the large differences between the two models, the event history analysis in Article 2 is ended in 1875.

⁵⁴ These 1001 persons are people that are considered as being present in Rendalen after the age of 17 and having disappeared from the registers before the age of 40.

⁵⁵ The use of last known event and first time a person is no longer present is fairly similar to the APX and AVX as described by A. Bideau and G. Brunet in “The Construction of Individual Life Histories. Application to the Study of Geographical Mobility in the Valseine Valley (French Jura) in the Nineteenth and Twentieth Centuries”, in D. Reher and R. Schofield (eds.), *Old and New Methods in Historical Demography*, Oxford, 1993, pp. 113-114.

Figure 5. *Examples of the determination of time at risk*

An example of how the risk population has been established for a family is given in Figure 5. After the death of her first husband, Ellen Semmingsdatter was remarried to Ouden Embretsen in 1743 and during the ten years from 1744 to 1754 they had six children, including the twins Ouden and Eli. Ouden died before baptism and he was buried the same day as Eli was baptised. All of the surviving children were confirmed in their late teens and

the children start to be considered under risk at the age of 17. The children over the age of 12 are registered at the extra tax census in 1762. This is the last time the oldest son Halvor is observed staying in Rendalen. In the probate register when Oudun and Eli settled their estate in 1776, Halvor is seen as married and living in a neighbouring parish. In the minimum presence model Halvor will be considered to be under risk of getting married until 1762. Under the maximum presence the time at risk will last until 1776. Eli and Semming are under risk until they got married, while Embret is censored by his death in 1773. Kirsti is last observed in the probate register in 1776, and in the maximum presence model she is under risk until she is censored at the age of 40.

THE CENSORING OF LIFE STORIES

In the population register we have a total of 6460 persons from Rendalen that can be considered as under the risk of getting married. Of these 5824 are positively observed in Rendalen as unmarried and over the age of 17. The two numbers are the differences between the maximum and minimum presence model when it comes to the number of individuals under risk of getting married. About half of these young men and women married in Rendalen, and according to the maximum presence assumption about a third moved away between ages 17-40. To look for any distortions in the material I have presented the distribution of the persons censored according to sex and social status (over 90 % of the population belongs to one of the two groups farmers and farm workers). The percentages for each censoring characteristics should be compared to the total percentage. In this way one sees that women are overrepresented as marrying but underrepresented as dying compared to men. Of more interest to the censoring of people migrating is the fact that farm workers not only had a greater chance of migrating but also that they more often were registered when migrating.

Table 2. *The number of persons under risk of getting married in Rendalen according to type of censoring.*

	Number	% women	% farmers	% farm workers
Married	3010	53	65	31
Died	379	36	58	36
Migrating	301	49	37	50
Emigrating	436	35	39	50
Age of 40	758	49	63	34
Census 1900	575	43	50	39
Missing	1001 / 368	48 / 41	44 / 51	46 / 42
Total	6460 / 5824	49 / 48	57 / 58	37 / 36

THE EVENT OF GETTING MARRIED

In the outline of how to determine the population at risk we stated that the marriages usually took place in the woman's parish. So, for the men living in Rendalen we have quite a few cases where they married women from neighbouring parishes, but settled in Rendalen where we observe that a marriage has taken place by the fact that a series of legitimate children are born. In order not to treat the marriages of men and women differently these marriages are included in the analysis. During the whole period, the mean time between the marriage and the first child recorded as legitimate in Rendalen was one year, and therefore the date of marriage is set to one year before the first recorded child in these cases. I have also included some marriages where we do not observe that a couple has married but where no children are born. In these cases we have determined the time of marriage by the use of several sources including local histories of farms and genealogies from neighbouring parishes.⁵⁶ By including these I have some 1600 first marriages for women between 17 and 40 years old and corresponding 1400 marriages for men on which to base the analysis. In 1060 cases the men and women belong to the same marriage.

⁵⁶ Anders Fosvold, *Bygdebok for Stor-Elvdal: bidrag til bygdens historie*, Hamar, 1936, Hans S. Hanssen, *Bygdebok for Stor-Elvdal*, Stor-Elvdal, 1975, Olav Nilsen and Thorbjørn Granlund, *Osen bygdebok*, Osen, 1983, Einar Steimoeggen, *Alvdal. Ei bygdebok*, Alvdal, 1973, Bjarne Grandum and Eystein Eggen, *Tyllaldalen-Brydalen bygdebok*, Tyllaldalen, 1997, Ivar A. Streitlien, *Tynset bygdebok. Gard og ætt*, Tynset, 1972.