Colonial control information available for Inuit family research

Disko Bay church and census records

The following three papers were presented at the IASSIST '87 conference in a plenary session entitled Research trends . The object of the session was to focus on the effect of new trends in research and data collection and the advance of technology on the use of data and data management techniques.

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Danish Data Archives

1. Historical Sources from Greenland

Indigenous people under colonial rule were not left in peace! This was not because of any sincere interest in the ethnic peculiarities of the people, but rather because bureaucratic registration also served the purpose of ensuring that the path of development was in accordance with the stipulations of the colonizing government.

In the case of the Eskimo population in Greenland, the Government was in Copenhagen, where different authorities requested very detailed information on personnel resources, production, buildings, etc. In most cases, the information was required in order to evaluate economic development; however, even health conditions, births and deaths, including reasons for death, were reported. And in realm of the church, baptisms, confirmations, weddings, and burials were reported to Copenhagen.

Prior to 1774, the "colonial initiative" was mainly a private one, consisting of tradesmen on one hand, missionaries on the other. In 1774, the main administrative tasks were centralized within Royal Greenland Trade, leaving the church to take care of its own affairs. From 1782 to 1950, Greenland was administratively divided into two Inspectorate Regions ,North and South, each with its own Inspector; the division line was located between Egedesminde and Holsteinborg. Needless to say, there were modifications introduced to this system during the last decades of the 19th century; and many administrative changes took place during the first half of the 20th century. However, a detailed description of these is beyond the scope of this short introduction.[3]

[1]Presented at the International Association for Social Science Information Service and Technology (IASSIST) Conference held in Vancouver, British Columbia, Canada, May 19-22, 1987

[2]I am indebted to Kirsten Elisabeth Caning for the articles she sent me, and to Jens Ludvig Wagner at the DDA for assistance and support when I tried to get an overview of the project.

[3]The above outline is based on Kirsten Elisabeth Caning, "Personalhistoriske kilder i grønlandske arkiver." Personalhistorisk tidsskrift, 1979.

During the period preceding 1951, all church matters as well as most issues concerning education were governed by the same administrative unit in Copenhagen. It is from this clerical administration that most of the information dealt with in this article originates.

2. The Church Records

Church records were maintained in the Greenland parishes during the first half of the 18th century; most of them have disappeared, and a couple of preserved manuscripts are incomplete in that they include information on the top strata of the Greenland population only. From the second half of the 18th century, there are preserved church records from Upernavik, Godhavn and Egedesminde. The lists of those baptized (Christening Lists) represent the majority of entries in the early years. The salvation of the souls of the heathens was one of the major preoccupations of missionaries; consequently, the number of baptisms performed was an indication of the efficiency of the missionaries.

The church records from the beginning of the 19th century, held in the Danish archives, are more complete, especially those from many of the parishes in the North Greenland Inspectorate. The records from the South Greenland Inspectorate are not so complete, in part due to the loss of a lot of these documents during their transportation to Denmark aboard the ship "Hans Hedtoft" (January 1959).[4]

The church records which have been preserved consist of four separate types of lists representing four different types of events: Christening Lists, Confirmation Lists, Marriage Lists, and Burial Lists. Concommitantly, the data sets stored at the DDA (the "raw data") are separated, in their initial form, into 4 different files:

- DDA-0311: Population History of Greenland 1800-1930: Christening Lists
- DDA-0312: Population History of Greenland 1800-1930: Confirmation Lists
- DDA-0313: Population History of Greenland 1800-1930: Marriage Lists
- DDA-0314: Population History of Greenland 1800-1930: Burial Lists

3. The Census Records

The missionaries were also responsible for the registration of all people in their districts (including those who were not Christians, and who, consequently, never appeared in the Church Records). The censuses in Greenland contained the same information as those in Denmark: name, age, occupation, and position in household. In addition to these, the Greenland censuses contained information on race (Eskimo, mixed and European) as well as an indication of whether or not the person had been baptized.

At the National Archive in Copenhagen, there are census records from: 1834, 1840, 1845, 1850, 1860, 1870, 1901, and 1911. Those from the Umanak and Disko Bay Districts, for all censuses except the 1911 census (because of the 80-year access restriction to personal records at the National Archives), have been made computer-readable and are available as:

[4]In the "Danish Titanic" case, "Hans Hedtoft" collided with an iceberg on her maiden voyage to Greenland, January 30th, 1959. All 95 crew members and passengers died.

- DDA-0645: Population History of Greenland 1800–1930: Census Lists

3. Geographic Coverage and Time Period Included in the Datasets

In the initial definitive stages of the "Demographic History of Greenland, 1800–1930" research project, both geography and time periods had to be taken into account. The above outlined existence of nearly complete archival series of church records and census records in Archives situated in or near Copenhagen, has some bearing on the geographic regions and time periods to be covered.

Geographically, the North Greenland Inspectorate had the most complete records. Consequently, the rather isolated regions in northwest Greenland, the Disko Bay District and the Umanak District (isolated in terms of in- and out-migration from/to the surrounding regions, so that few individuals "disappear" via migration) were selected; from north to south (or rather, "around the bay") in the Umanak and Disko Bay Districts thus defined, Umanak, Godhavn, Ritenbenk, Jakobshavn, Christianshåb, and Egedesminde are the larger township areas included in the project.

With respect to time period covered, the availability of records suggests that the registration should begin around the turn of the 18th century, i.e. around the year 1800. For reasons of restricted access (and, of course, as a means of reducing the resources required for the data collection process), the registration was stopped at the beginning of the 20th century.

4. The Data Collection Process

Coding was done from the original sources, or copies thereof by the principal investigator, Kirsten Caning, together with a student aide (see figure 1).[5] The coding sheets were then sent out to have the information transformed to a computer-readable medium. The machine-readable data were deposited with the DDA, where Jens Ludvig Wagner (who was experienced in demographic data and family reconstitution methods from his work with several other historical projects) took over the transformation tasks as they were requested by Ms. Caning.[6] During this process, the following rectangular files were generated:

- DDA-0311:17,248 Baptism entries, each with up to 53 variables
- DDA-0312: 10,037 Confirmation entries, each with up to 62 variables
- DDA-0313: 4,720 Wedding entries, each with up to 90 variables
- DDA-0314: 13,217 Burial entries, each with up to 84 variables
- DDA-0645: 23,953 Census entries, each with up to 37 variables

These five files form the basic "raw data" of the project. However, after this initial collection of raw data, a tremendous effort was devoted to data correction and family reconstitution. Correction involved, for example, the deletion of double entries (e.g. the baptism of the same child in two parishes in the Church Records, or

[5][figures and tables are collected together at the end of the article. Ed. note]

[6]See Jens Ludvig Wagner, "Datamaterialer med komplekse strukturer", in DDA-Nyt 25:64-70, 1983.

enumeration of the same person in two households in the Census Records). Those with experience in family reconstitution projects know the amount of preparatory work to be done before one can produce a centralized file. Therefore, I shall go into some detail concerning the methodology applied in this particular family reconstitution project. How did we derive, from the above listed five raw data files within which all the events were sequentially numbered, the so-called "centralized file" containg the best possible reconstitution of families?

5. Family Reconstitution: Manual and/or Automatic Procedures

Within the discipline of historical demography, there has been quite a long tradition of two "schools", one advocating automatic (i.e. computer based) family reconstitution procedures, the other maintaining that a lot of human thinking is necessary in order to get as close to the ideal of a complete reconstitution as possible. In the case of the data from Greenland, a mixed automatic and manual process was used.

With the raw data (or basic files) as the point of departure, two tasks had to be completed: that of identifying the events (e.g. a baptism, confirmation, wedding, burial, or membership in a certain household in a specified census enumeration) as attributes, or descriptors, characterizing the "central persons" (or "actors") when the event took place, and that of establishing "pointers" among all the central persons based on their family relationships.

Who are the Central Persons (CPs) in this project? - In the event of a baptism or a confirmation, the baptized/confirmed person and his/her parents are the CPs; in the event of a wedding, bride and groom as well as parents of both of the married persons are CPs; when the event is a burial, the buried person and his/her parents as well as a spouse and children are CPs. Finally, in census enumerations, each person listed in each census is a CP. By machine generation, the Basic Files were thus expanded into a "Theoretical Centralized File" with more than 200,000 "central person in one event"-combinations. We shall call these Central Person-Event records (CPE). A sequential number was allocated to each CPE.

The CPE-file was sorted on names; some auxilliary lists sorted on districts and other criteria were produced by Jens Wagner whenever Kirsten Caning needed and requested such lists during the work. The sorted CPE-file(s), written out as long paper listings, formed the basis for the next major state: the process of manually inserting Personal Identification Numbers (PIN), (see figure 2).

Even though the sorting based on names did help a lot, the task of numbering more than 20,000 individual persons (as it turned out later) on more than 200,000 CPE-records was a heavy consumer of both time and human memory! And now we may return to the question whether the machine or the manual reconstitution is "better". It goes without saying that the choice of method depends heavily on the nature and quality of the raw data; so we shall talk about advantages and disadvantages, (see figure 3).

Automatic family reconstitution has the advantage of being relatively quick and being well documented. However, in many cases a lot of persons are left "split" in two or more persons. For example, figures 1 and 2 (1901-census) compared to the extensive figure 3 (an excerpt from the CPE-file after all CPs have been numbered) clearly demonstrates a number of problems with machine reconstitution: Nikolaj Jens Andreas Lange was found under many different names, partly due

to the fact that the first names may be written in any order (some of them may be missing), partly because of different spellings (some of which are not caught in the normalization process, e.g. Nik(olaj) vs. Nic(olaj)). Figures 2 and 3 show that Kirsten Caning preferred to work with "normalized names" in order to minimize the spelling problem. But even with that precaution, the decision was made to perform the reconstitution manually.

The reconstitution process was carried out by entering PIN-numbers on all relevant locations in the CPE-file. During that process, a number of errors were detected and corrected - this is probably one of the main advantages of manual reconstitution. After some iterations of PIN-numbering, the theoretical CPE-file was reduced from more than 200,000 records to approximately 131,000 CPE-records.

6. The Documentation Problem in Manual Family Reconstitution

Who "disappeared" from the theoretical CPE-file? Approximately 70,000 entries vanished from the "theoretical" to the "reduced" version of the CPE-file. The records of type "own baptism" were reduced from 17248 to 16312; "own confirmations" were reduced from 10037 to 9169; "own marriage" from 9442 to 8388; and "own burial" from 13217 to 11678. Because some census registrations had been erroneously omitted from the first data entry process, the number of census registrations increased from the original 23953 to 24076. (The first number is the size of file given in section 4 for Raw Data Files).

Theoretically, one might expect that every person involved in a baptism, confirmation, marriage, or burial would have two parents. However, these CPs have, in many instances, not been identified in the source records. Therefore the number of CPE-records in which parents were registered in each of the four events was reduced from the "theoretical" numbers 34496, 20074, 18884 and 26434, to 31338, 13538, 4902 and 9181 respectively. Predictably, it was in the events in which the "main actors" were adults (marriages and burials) that the information on parents was most commonly missing.

There is a major difference between the theoretical expectation that there was a spouse for each person buried (i.e. 13217 spouses) to the actual 2328 cases in which a spouse was actually identified. This is due, to a great extent, to the fact that many burials were of children (high infant mortality rate), and also in part to the death of unmarried adults; also some of the missing spouses were due to lack of registration. Finally, theoretically, it was expected that there would be information on at least one child for each buried person (i.e. an expectancy of 13217 persons); however, it turned out that this information was available in the source records only in 56 cases.

Does this mean, now, that we have lost the information in those of the CPE-records that were not merely theoretical, but in which the information was not given in the source records? It does not!

If a person was buried who was married at the time s/he died without an indication thereof in the burial record, we have data about the marriage from a different source. Similarly, if one or both parents of a baptized person were not mentioned in the Baptism File, we still may know of them from other sources, e.g. from a relevant census. This leads us on to the "record linkage", which in this project was done in an *ad hoc* data system.

7. Finalization of the Family Reconstruction in a Data Base Environment

During 1984 and 1985, several MLD/ASTRID[7] data bases were designed and tested on subsets of the data from the Greenland Project. Even though a number of these designs were acceptable from the substantive point of view, they had to be rejected because they would consume too much computer power when loaded with the full data base. [8]

With further computations and tests, a data base design was finalized by the end of 1984[9] and implemented with all the data from the project. The basic design of the data base is that one part contains all PERSONs and another part contains all the EVENTs. Each person is identified by the PIN-number preceded by M (males) or K (females). There is no need for a lot of pointers because the searching is based on key fields in PERSONs and EVENTs respectively.

I shall not go into the technical details of the data base in this paper. However, I shall demonstrate the output from the data base using the two heads of household that we have followed in figures 1-3 above, (refer to fiqure 4).

As can be seen from figure 4, not much has been done to present the output in an easily understandable way; thus far, only people actively involved in the project have used the system, and they know what the encryptions mean. If the data base system were to be used by others outside the project, more text would have to clarify the output.

Using this data base, the principal investigator is presently finalizing the family reconstitution task. Also, special purpose functions have been designed for demonstration purposes; for example, it is quite easy to establish pointers to allows a user to move up and down along genealogical lines, drawing the complete pedigree of the person under analysis.

It should be noted here that several features that are specific to the Inuit culture are reflected in the data. People may be referred to their biological family, to an extended family or household, or to the particular house in which they lived. It was quite usual for the Eskimo to live in so called longhouses.Several households lived in the same longhouse during the winter (when censuses were taken); during the summer, they might move away from the house, living in tents or similar dwellings. The following year, the family might move to a different longhouse at the same or at a different location; the houses were not owned by anyone - or, rather, they were owned by whoever happened to be occupying them. This tradition of living together in longhouses included a social security aspect; the data show that this tradition was slowly abandoned in favour of nuclear family houses during the 19th century.[10]

With the huge number of cross-identifications in the data, it is possible to follow individuals or families (biological or extended) for generations. Alternately, it is possible to examine a single location, and to describe how life changed in that particular location over the

[7]MLD/ASTRID is a data base language and system, defined by Jørgen Grosbøl at DDA, described in his manual: MLD Data Bases and the ASTRID Language. Odense: DDA 1981.

[8]The basic design was described in Karsten Boye Rasmussen, "MLD/ASTRID database for Grønlands befolkningshistorie", Working Paper A460-KB. DDA 1984-07-31.

[9]Jens Wagner, "MLD/ASTRID database for Grønlands befolkningshihistorie - design uden referencer", Working Paper A460-JW, DDA, 10. December 1984.

[10]Described in Kirsten Caning, "Fra bofællesskaber til kærnefamilie", Beretning fra Carlsberfondet, København 1986.

years. The latter strategy was applied by the principal investigator in an article on Sermermiut – a small place with only two houses with 20 and 12 inhabitants respectively (3 households per house).[11]

8. Access to the Datasets for Secondary Analysis

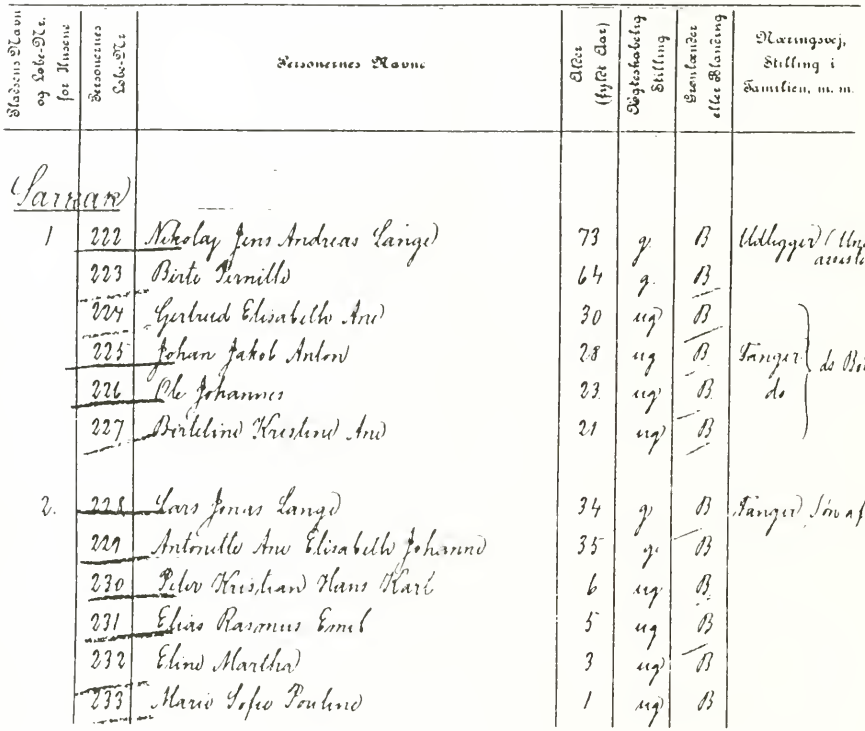
Despite the fact that the primary investigator has not yet finalized the troublesome reconstituition process, it will be possible for secondary analysts to have access to the data, with the consent of Kirsten Caning. All requests should be directed to the DDA.

Needless to say, it is not quite as simple to address a user requesting this type of data as it is to send out a survey file. The user must define *a priori* the subsets or the formats s/he can handle. Further, it is the nature of historical-demographic data of the type we have been discussing that their quality improves over the years; during analysis, new findings concerning data relationships can be added. Such changes are now reflected in the data base version of the data, but not in the Raw Data Files mentioned in section 4.

Consequently, disseminable versions of the data should be extracted from the data base according to the specifications of the individual user. With the data stored in a data base management system, it is possible to generate rectangular files that can be analyzed with standard statistical software. However, to get the full personal history description capabilities, a data base management system environment would be needed by the user.□

[11]Tinna Møbjerg and Kirsten Caning, "Sermermiut in the Middle of the Nineteenth Century", Arctic Anthropology vol. 23(1-2):177-198, 1986.

figure 1



Husets Navn og Løb-Nr. for Huset	Personernes Løb-Nr.	Personernes Navne	Alder (fyldt Aar)	Ægteskabelig Stilling	Grønlænder eller Blanding	Næringsvej, Stilling i Familien, m. m.
(Sarraak)						
1	222	Nikolaj Jens Andreas Lange	73	g	B	Udlagger (Under-assistent)
	223	Birte Pernille	64	g	B	
	224	Gertrud Elisabeth Ane	30	ug	B	Fanger } de Børn
	225	Johan Jakob Anton	28	ug	B	Fanger } de Børn
	226	Ole Johannes	23	ug	B	do } de Børn
	227	Birtelind Karoline Ane	21	ug	B	} de Børn
2.	228	Lars Jonas Lange	34	g	B	Fanger Søn af 222
	229	Antonette Ane Elisabeth Johanne	35	g	B	
	230	Peter Kristian Hans Karl	6	ug	B	
	231	Elias Rasmus Emil	5	ug	B	
	232	Elise Martha	3	ug	B	
	233	Marie Sofie Pauline	1	ug	B	

Figure 1: Xerox copy of one of the source materials, viz. the Census List from October 1901, with information from Saraqaq in Ritenbek. The upper household is that of Nikolaj Jens Andreas Lange, living with his wife and 4 unmarried children aged between 21 and 30. The lower household is an older son, Lars Jonas Lange, with his wife and 4 children.

The figure is reproduced from an illustration in Kirsten Elisabeth Caning, "Om den grønlandske befolknings historie", printed in Forskning i Grønland 1/82, p. 5.

figure 2

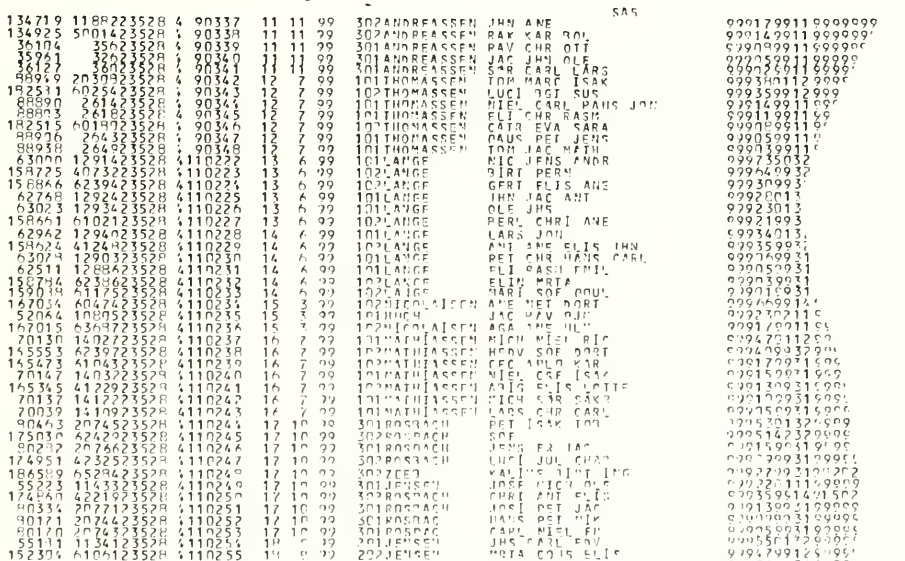


Figure 2: The same persons as those listed in figure 1, now listed from the computer. To the left of the "normalized" names field, lots of numbers of identification appear, i.a. the PIN-number appearing in columns 7-12. Our head of household Nikolaj Jens Andreas Lange has PIN-code no. 12914 - in the Ritenbenk District (code 4 in col. 19), the 1901-census (code 28 in cols. 16-17) from which the information was taken. He has that number in all other datasets as well, which we shall see later.

Figure 3

Figure 3

figure 3 ...cont

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                                                              SAS                                      17:57 WEDNESDAY, MAY 13, 1987     2
 62699 12914235 5010718 714050720509869 1LANGE        JENS
9010101                                          9999990009999992LANGE   BIRT  99999509902991LANGE         JHN JAC ANT NIEL
                                                                                              99999999990299010199O1991     260786
 62698 12914235 5010336 7140600225128711LANGE         JENS
1010101                                          9999990009999992LANGE   BIRT 99999999902992LANGE          GERT ELIS
                                                                         PERN                  9999999990299010199O1991     111287
 62693 12914235 5016765 2440403611018741LANGE         JENS
4010101                                          9999990009999992LANGE   BIRT  99999509902991LANGE         JHN JAC ANT
                                                                                              99999999990299010199O1991     999987
 62695 12914235 5016939 2440408430048761LANGE         JENS
6010101                                          9999990009999992LANGE   BIRT  99999509902992LANGE         SARA HEDV DORT
                                                                                              99999999990299010199O1991     260387
 62989 12914235 5014898 2440509203038781LANGE         NIC ANDR JENS
8010101                                          9999990009999992LANGE   BIRT 99999999902991LANGE          OLE JHS ADL
                                                                         PERN                  9999999990299010199O1991     260187
 62700 12914235 5017372 2440600217058801LANGE         JENS
0010101                                          9999990009999992LANGE   BIRT  99999509902992LANGE         BERL CHRI ANE
                                                                                              99999999990299010199O1991     040288
 63006 12914235 6005139 7140400214038661LANGE         NIK JENS
2LANGE          DORT                        99999999909999                    99999509922LANGE        SOF
    9999999990202990299991                                                                99999999999                       160885099
 62993 12914235 6005291 7140600120038721LANGE         NIC JENS
2LANGE          BIRT PERN                   99999999902999                    99999509291LANGE        FR CHR
    9999999990202990299991                                                                99999999999                       170685699
 62708 12914235 6003187 7140300430058741LANGE         JENS
2LANGE          BIRT                        99999999902999                    99999509292LANGE        JUD
    9999999990202990299991                                                                99999999999                       090186001
 62709 12914235 6009303 2440410921068771LANGE         JENS
2LANGE          BIRT PERN                   99999999902999                    99999509292LANGE        HEDV SOF DORT
    9999999990202990299991                                                                99999999999                       071286199
 62707 12914235 6003104 5120300129078801LANGE         JENS
2LANGE          BIRT                        99999999902999                    99999509291LANGE        CHR JØRG GRØNBORG
    9999999990202990299991                                                                99999999999                       280286499
 62710 12914235 6009339 2440600406088811LANGE         JENS
2   9999999990202999999999                  99999999999999                    99999509991LANGE        LARS JON
                                                                                          99999999999                       010386799
 62711 12914235 6009665 2440603211078861LANGE         JENS
2   9999999990202999999999                  99999999999999                    99999509992LANGE        GERT ELIS ANE
                                                                                          99999999999                       111287199
 62706 12914235 6002692 4110300725078891LANGE         JENS
2   9999999990202999999999                  99999999999999                    99999509991LANGE        JHN JAC ANT
                                                                                          99999999999                       121287399
 62703 12914235 6000980 4110400713038921LANGE         JENS                    99999669292LANGE        SAØ HEDV DORT             270387699
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Figure 3

figure 3 ...cont

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2                                              99999999999999          SAS                         9999999999917:57 WEDNESDAY, MAY 13, 1987     3
 99999999990202999999999
 62996 12914235 6000875 41104009130389 21LANGE       NIC JENS ANDR            99999669291LANGE      OLE JHS ADL                 260187899
2LANGE       BIRT PERN                 9999999999902999                                       99999999999
 9999999999020299029999 1
 62704 12914235 6000995 4110402315088941LANGE        JENS                     99999509992LANGE      BERL CIRK ANE               040288099
2                                      99999999999999                                         99999999999
 9999999999 0202999999999
 62995 12914235 8007027 7140705129108601LANGE        NIC JENS                 999999999509299992LANGE      SOF DORT                   12
06858 9999999999 12LANGE       BIRT PERN              99999999999299991                            99999999999999999
                               99999999999999999049904 0499991
 62712 12914235 8007214 7140512022078711LANGE        JENS                     999999999509299991LANGE      JHN JAC ANT NIEL           26
07869 9999999999 12LANGE       BIRT                   9999 99999999299992                          99999999999999999
                               99999999999999999049904 0499991
 62714 12914235 9003467 4110306701079091LANGE        JENS                     999999999509699992LANGE      BIRT PERN                  99
99999 72999490991                                     99999999999999999992                         99999999999999999
                               9999999999999999904 99999904991
 63011 1291423521 7 6 197   20  9   2   301LANGE     NIK JENS ANDR            8250799312 9999999 0 0 0 1 2    49  5 3 0 0  3   508 3  5
 62998 1291423522 7 6   9310001001 001 0001LANGE     NIC JENS ANDR            8281399312 99999991010101010    41  4 2 0 0  3   517 2  4
 62999 1291423523 7 6   8110001001 001 0001LANGE     NIC JENS ANDR            8281899312030075 91010101010    40  7 3 2 0 12   522 5  1
 62741 1291423524 7 8   2010001001 001 0001LANGE     JENS NIC                 9992272322 99999991010101010    70  2 1 0 0  1   535 1  1
 62742 1291423525 7 8   21   25  4 99   301LANGE     JENS NIC                 9992872342 9999999 0 0 0 3 01000010010101010 0   561 6  1
 63007 1291423526 714 2551000100100 10001LANGE      NIK JENS                  9993250322 9999999101010101010000100101010100  659 3  1
 62743 1291423527 714 315   43 12 99    301LANGE     JENS NIC AND             9994250322 9999999 0 0 0 2 110000100101010100   858 4  1
 63000 1291423528 411 222   13  6 99    101LANGE     NIC JENS ANDR            9997350329999999 1 0 0 0 0 110000100101010100   800 3  1
 62958 12940235 1010180 71404000020 48671LANGE       LARS JON                 0103867010101                                         9999990
00999999 91LANGE         NIC JENS                99999 509902992LANGE        BIRT PERN              9999999990299010199 01991
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Figure 3

figure 3 ...cont

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 62959 12940235 2009339 24406004060888 11LANGE          LARS JON          SAS              0103867991LANGE        JENS              17:57 WEDNESDAY, MAY 13, 1987      4
2                                         99999999999999                                                 9999999999                                        9999950999
  999999999020299999999

 62960 12940235 3000407 411040200508894 1LANGE          LARS JON                           99999992701919040 62CHRISTENSENANT ANE ELIS JHN KAR      9
999999279991904241                                            99999999999999999992                                            9999999999999999991
                                    99999999999999999992                                    999999999999999999903039999999

 62942 12940235 5001590 41104039230689 51LANGE          LARS JON                           99999019902991LANGE       PET CHR HANS CARL               280589
5010101                                                  999999000999999 2LANGE       ANT ANE ELIS          99999999902990101990 1991

 62943 12940235 5001599 41104048070189 71LANGE          LARS JON                           99999019902991LANGE       ELI RASM EMIL                   091289
6010101                                                  999999000999999 2LANGE       ANT ANE ELIS         9 9999999902990101990 1991

 62944 12940235 5002055 41104056131189 81LANGE          LARS JON                           99999019902992LANGE       SAB HLN MRTA                    181089
8010101                                                  999999000999999 2LANGE       ANT ANE ELIS JHN KAR  99999999902990101990 1991

 62943 12940235 5002071 41104072111190 01LANGE          LARS JON                           99999019902992LANGE       MARI SOF PAUL                   251090
0010101                                                  999999000999999 2LANGE       ANT ANE ELIS JHN      99999999902990101990 1991

 62946 12940235 5001670 41104119170990 51LANGE          LARS JON                           99999019902991LANGE       JENS NIK ANDR                   200890
5010101                                                  999999000999999 2LANGE       ANT ANE ELIS JHN      99999999902990101990 1991

 62863 12940235 6003549 71404109010890 91LANGE          LARS                               99999509291LANGE      PET CHR HANS CARL               280589599
2LANGE        ANE                         99999999902999                                             99999999999
  9999999999020299029999 1

 62948 12940235 6001956 71406007250691 11LANGE          LARS JON                           99999509291LANGE      ELI RASM EMIL                   091289599
2LANGE        ANT ELIS JHN                99999999902999                                             99999999999
  999999999020299029999 1

 62949 12940235 6002115 71406018170891 31LANGE          LARS JON                           99999509292LANGE      SAB HLN MRTA                    181089799
2LANGE        ANT ELIS JHN                99999999902999                                             99999999999
  9999999999020299029999 1

 62950 12940235 6002127 71406030250291 61LANGE          LARS JON                           99999509292LANGE      MARI SOF PAUL                   251090099
2LANGE        ANT ELIS JHN ANE            99999999902999                                             99999999999
  999999999020299029999 1

 62947 12940235 6002007 71406056280392 01LANGE          LARS JON                           99999509291LANGE      JENS NIK ANDR                   200890599
2LANGE        ANT ELIS JHN ANE            99999999902999                                             99999999999
  999999999020299029999 1

 62951 12940235 7000881 7 80602814029161LANGE           LARS JON                           999999999019699999 1LANGE      JHN PET CARL SAKR        1
40488999019190701 2JENSEN      MGDL SARA FR               0801898999999190701 2LANGE       CHRI                  999999999999 4999991JENS
EN      SIGV DLE VILS CASP       9999999990196999992JENSEN       JHN KAR MRTA          999999999999499999030303030303

 62954 12940235 7000740 51206045090491 61LANGE          LARS JON                           9999999995092905251LANGE       PET CHR HANS CARL        2
80589599539190501 20LRIK       BATZ REG MARG              28128909961919050 12CHRISTENSENANT ELIS JHN ANE      99999999999992905251 0LRI
K       CHRI FR CARL             99999999950949051 120LRIK       BIB                   999999999999690511030303030303

 62952 12940235 7000898 8 50604521049201LANGE           LARS JON                           9999999995092907031LANGE       ELI RASM EMI             0
912896990191907032LYNGE        KAR JAC PET AUGN           0210899999991907082LANGE       ANE ANT ELIS          99999999999992907031LYNG
E       AUGN                     9999999998396907082LYNGE       JUL KAR BIRT          999999999999490708030303030303
```

Figure 3

figure 3 ...cont

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                                              SAS                                  17:57 WEDNESDAY, MAY 13, 1987    5
 62955 12940235 7000769 5120607427039211LANGE      LARS JON             9999999995092905251LANGE      PET CHR HANS CARL       2
8058959935919999928ROBERG    SAB HANS MARI MRTA      1807896999991905282LANGE      ANT ELIS JUL ANE      99999999999992905251
                          99999999999999999992                                      99999999999999999903030303 9999

 62953 12940235 7100909 7 8060572208922 1LANGE    LARS JON             9999999995092907031LANGE      ELI RASM EMI            0
912896995394207012CLASEN     ANE MARI LOU JHN        2807899999919070 12LANGE      ANE ANT JHN ELIS      999999999999929 07031CLAS
EN      PAV PET VIT              999999999999969 07082CLASEN    CEC DORT ANT MAR      99999999999949070803030303 0303

 62956 12960235 7000936 7140608322029271LANGE      LARS JON             9999999995092907032LANGE      MARI SOF PAUL           2
5109009999919 07031JENSEN    FR ROSBACH JHS          14019009953999 07022LANGE      ANT ELIS ANE JHS      99999999999992907031JENS
EN      OLE ANDR PAV PET         999999999509290 7022JENSEN      SARA HEDV DORT        99999999999929070203030303 0303

 62957 12940235 7103385 8 1140121010930 1LANGE    LARS JON             9999999995092908171LANGE      ELI RASM EMIL           0
912895995094308032SAMUELSEN  ABIG MRTA BERL CATR      2305913999991908352LANGE      ANT ELIS JHN          99999999999992999991SAMU
ELSEN   CARL FR HANS             999999999019290 8172SAMUELSEN  JHN ORPA              99999999999929999903030303 0303

 62961 1294023527 714 322  43 12 99  301LANGE      LARS JON             9990399312 9999999 0 0 0 2 110000100101010100   858 4  8


 62962 1294023528 411 228  14  6 99  101LANGE      LARS JON             999340132902 02229 0 0 0 0 110000100101010100   801 3  1
```

Figure 3 (pp. 10–14 incl.): Excerpt from the CPE-file after the PIN-codes have been entered. The excerpt covers the two heads of household that were listed in figures 1 and 2, i.e. PIN-nos. 12914, Nikolaj Jens Andreas Lange, and 12940, Lars Jonas Lange. Here is a short introduction to the two persons:

12914 Nikolaj Jens Andreas Lange: The first block of 3 lines of this figure concerns his confirmation (code 2 in col. 17 of the first line); strangely enough, he seems never to have been baptized. The following 3 blocks (code 3 in col. 17) concern his 3 consecutive marriages, with Sof(ie) Hedv(ig) Dort(e) Lundblad, Mar(ia) Sara Brønlund, and Birt(e) Pern(ille) Brønluns – to whom he has earlier been shown to have been married in 1901.

After the three marriage records follows his burial registration (4 in col. 17 of the first line). The following blocks (code 5 in col. 17) contain information on the baptisms of 16 children, and confirmation records on 11 of the children (code 6 in col. 17). There have been burials of two of his children (code 8 in col. 17), and burial of one spouse (code 9 in col. 17). Finally, Nikolaj Jens Andreas Lange is present in every one of the 8 census enumerations, reflected in blocks with codes 21–28 in cols. 16–17.

12940 Lars Jonas Lange: Following the same coding patterns, Lars Jonas Lange is seen to have been baptized, confirmed and married (codes 1, 2, and 3 in col. 17). 5 children have been baptized and 5 confirmed (codes 5 and 6 in col. 17); as many as 7 events are registered with marriages of his children (code 7 in col. 17), and Lars Jonas Lange has appeared in 2 censuses (codes 27–28 in cols. 16–17).

figure 4

```
*PERSON: M012914
BARN          K062355 M012938
BARN         *M012927 M012891 K062429 K062398 K040998 M012878 M012940 K062394
             M012906 K062384 K062397 K061204 K061021 M012934 M012924
GIFT          K040732 K040712 K062382
STAMDATA      1825 JENS NIK ANDR LANGE 3 9 1905 816
TRANSDATA     B010901905081601500 B034671909070102506 B063741860102920502
              B072141871072210502 D063831857021010504 D080641851040520725
              D080701852091820352 D099901866030720502 D100941864031510502
              D101801867040210502 D103361871122520002 D104931856051410720
              D106141858071120502 D106271861122920502 D107181869090510502
              D168351978031031002 D065801874010410502 D169391876043020502
              D173721880031720502 K008751892031310662 K009801892031320662
              K009951894081520500 K026921889072510500 K031041880072910502
              K031871874053020502 K045011842032801000 K051391866031420500
              K052111872032010502 K093031877062120502 K093391881080610500
              K096651886071120500 S700401845000012001 S700411840000003001
              S700491834000003001 S700701850000001722 T408001901000001502
              T705081834000003001 T705171840000003001 T705221865000001001
              T705351950000001722 T705631855000001724 T706591860000001502
              T708581870000001502 V013521857021001504 V018561849091601721
              V021941852012801000
*PERSON: M012940
BARN          K040732 M012914
BARN         *M012903 M012886 M012916 K062386 K061175
GIFT          K041248 K061998
STAMDATA      1867 3 1LARS JON LANGE 3 11
TRANSDATA     D015901895062310012 D015991897010710012 D016701905091710012
              D020551898111320012 D020711900111120012 D101801867040201000
              K019561911042510502 K020071920032810502 K021151913081720502
              K021271916022520502 K035491909080110502 K093391881080601000
              T408011901000001012 T708581870000003001 V004071894080501011
              V007401916040910502 V007691921032710502 V008811916021410016
              V008981920042110502 V009091922082210502 V009361927022220502
              V033851930101010502
```

Figure 4: The information in the PERSON archive on the same two heads of household as reflected in earlier figures. The person is identified by the PIN-code preceded by M (males) or K (females); the second line gives the parents, third (and forth if necessary) the children. Under the heading GIFT (= married) the spouses are identified. Finally, under the heading TRANSDATA there are references to all events in which the individual was considered a CP. The initial letters identifying events are: B for burials, D for baptisms, K for confirmations, S for censuses with the extended family as the unit, T for censuses with a biological family as the unit, and V for the weddings.