FIVE CENTURIES OF MARRIAGES (5CoFm).
A PROJECT OF HISTORICAL DEMOGRAPHY
IN THE BARCELONA AREA

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PAPERS DE DEMOGRAFIA

2011
En aquest document es realitza una presentació del projecte
*Five Centuries of Marriages (5CofM)*, dirigit per la Professora Anna Cabré
i finançat per l'European Research Council, convocatòria Advanced Grant.

Centre d’Estudis Demogràfics

2011
Five centuries of marriages (5CofM). A project of Historical Demography in the Barcelona Area.

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The project

- Advanced Grant – European Research Council.
- Partners:
  - Universitat Autònoma de Barcelona (UAB).
  - Centre d'Estudis Demogràfics (CED).
  - Centre de Visió per Computador (CVC).

AIM

This project is a long-term research initiative based on the data-mining of the Llibres d'Esposalles conserved at the Archive of the Barcelona Cathedral. This extraordinary data source comprises 291 books of marriage licenses records, with information of approximately 610,000 unions celebrated in over 250 parishes of the Diocese between 1451 and 1905.
• The extraction of all the substantive information on five centuries of marriages contained in the *Llibres d’Esposalles* through the construction of an exhaustive database to be named *The Barcelona Historical Marriage Database (BHMD)*.

• The development of demographic and social research based on the time-series and the geographical distribution of the marriages and the characteristics of the newly wed, such as occupation of the husband, former marital status of husband and wife, socioeconomic position signaled by the fee imposed on them, and, when possible, occupations of their fathers, survival of their parents, place of residence and geographical origin (when different from place of celebration).

• The methodological research on linkage of identities and kinship, aiming to reconstruct genealogies which can in some cases cover up to ten generations or more and constitute a privileged material for the study of life-change, intergenerational transmission and siblings differentials in occupation and social status.

• The establishment of interdisciplinary links and permanent cooperation between research in social sciences and research in computer science, having for common grounds the reading, recognition and transcription of manuscript data.
• Marriage series and the concept of net reproduction.
• Chronology and geography of population estimates.
• The data on marriage fees and occupations.
• Migratory flows.
• Survival, thus mortality.
• Linkage of identities and kinship.
Universitat Autònoma de Barcelona – Centre d’Estudis Demogràfics:
• Anna Cabré (Principal Investigator and director of the CED)
• Joana Maria Pujadas-Mora (Coordinator).
• Ainhoa Alustiza (Postdoctoral researcher).
• Miquel Valls (PhD student).
• Albert Garcia-Soler (PhD Student).
• Joan Pau Jordà (PhD Student).
• Aina Moragues (Research Assistant).
• Kenneth Pitarch (Master Student).

Centre de Visió per Computador:
• Josep Lladós (Senior Researcher and director of the CVC).
• Àlícia Fornés (Coordinator).
• David Hernández (PhD Student).
• Núria Cirera (Master Student).
1481: volume 2

Dit die rebem d(e) les (e)sposalles de pere saba / ter pescador a(m)b na benete donzella filla / de franci paulegue q(uondam) pescador fou licen / tia g(e)n(eral) quatre sous IIII sous

On said date we receive the marriage license fee for pere sabater fisherman with maiden benete daughter of franci paulegue deceased fisherman it was a general license charge of 4 sous IIII sous

1601: volume 61

Dit dia reberem de Joan rovira pages viudo de la parroquia / de subirats, a(m)b Elisabet donzella filla de simeon soler pages / de olesa del espital y de margarida q(uondam) 4 sous

On said date we received from Joan rovira peasant widower from the subirats parish and maiden Elisabet daughter of simeon soler peasant from olesa de espital and the deceased margarida 4 sous

1729: volume 127

Joan Antoni Caroli criat nat(ural) del estat de floren- cia, a(m)b Marlalena Puig viuda Par(roquia) s(an)t Jaume de Bar(celona) na Amore dei

Joan Antoni Caroli valet from the state of florence with Marlalena Puig widow from sant Jaume of Barcelona Parish. Amore dei (no fee)
1786: volume 157

On said date of the 13 of June 1786
Don Domingo Felix de Mora y de Areny Marques of Llio son of Don Joseph de Mora, and of Dona Violante de Areny with Dona Maria Caetana de Paguera daughter of Don Narcis de Paguera y Sala and of Dona Maria Ventura Vilalba Pi Parish 24 lliures

1903: volume 243

Day 2
Jose Comas Gerard unmarried day laborer son of Agustin and Rita with Carmen Tapias y Astell unmarried daughter of Juan and Carmen - Santa Maria del Mar Parish of this city Pesetas 1’10
Marriage licenses fees for the two year period that starts on the first of May, 1627 and ends on the last day of April, 1629

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dukes, Marquises, Counts and Viscounts.</td>
<td>12 ll</td>
</tr>
<tr>
<td>Noble knights and Lords of vassals.</td>
<td>2ll 6s</td>
</tr>
<tr>
<td>Knights, Honored Citizens and Bourgeoisies.</td>
<td>1ll 4s</td>
</tr>
<tr>
<td>Merchants, Notaries of Barcelona, Shopkeepers of distinguish materials, Chemists and Druggists.</td>
<td>12s</td>
</tr>
<tr>
<td>Shopkeepers of materials, Royal Notaries, Surgeons, Traders, Solicitors, Middlemen and Artists.</td>
<td>6s</td>
</tr>
<tr>
<td>The rest.</td>
<td>4s</td>
</tr>
<tr>
<td>The poor ones for the love of God.</td>
<td>-</td>
</tr>
</tbody>
</table>
Dioceses of Barcelona

Degnanat de Piera
10 volumes: 1572 - 1831
14,806 marriages

Degnanat del Penedès
19 volumes: 1563 - 1802
26,493 marriages

Degnanat del Vallès
18 volumes: 1541 - 1803
12,896 marriages

Oficialitat de Barcelona
244 volumes: 1451 - 1905
555,679 marriages

182 municipalities (c. 250 parishes)
- (1) Oficialitat de Barcelona: 61
- (2) Degnanat del Penedès: 50
- (3) Degnanat del Vallès: 46
- (4) Degnanat de Piera: 25
THE WORK OF THE DEMOGRAPHY TEAM
- Professional company.
- More than 100,000 documents.
Barcelona Historical Marriage Database – Data mining

Data mining:
- Web Application.
  - Centralization of documents and data.
  - Work online.

http://www.cvc.uab.es/5cofm/
Present status - Barcelona Historical Marriage Database

c. 290,000 marriages (at 1st of December):
- 55 transcribers + 3 groups of highschool students.

Target databases:
- Alphabetical lists of groom's and bride's surnames from 1451 to 1650.
- All marriage licenses for one out of every ten years from 1451 to 1905.
- All marriage licenses from 1575 to 1643.
- All marriage licenses from 1787 to 1860.
- All marriage licenses in January, from 1861 to 1905.

Harmonization (1575 – 1643): 48,921 marriage licenses.
- Names: 1685.
- Surnames: 18,824.
- Occupations: 1452.
- Geographical location (origin and residence): 773.
First results


An example: Secularization in the 19th century

Peasants

Weavers
THE WORK OF THE COMPUTER SCIENCE TEAM
La robevem del sor Jaume Casademunt cavaller en bar.

Sant fill del sor Bernat Casademunt ciutad honraret

la senyora succeja Casademunt y de olers, ab la sr.

obet Anna donpella filla del g. fia Idi Puig gener mer

re ciutad de Bara y de la senyora Isabel Jaumiza.
Word Spotting

**LOCI + Hash-table (pre-segmented)**

**Query by exemple**

**Graph approach**

**HOG + SVM (windowing)**

**SIFT + Indexing (windowing)**
Handwriting recognition

- Hidden Markov Models
  - WER: Open Vocabulary: 16%, Closed Voc: 13%
- Neural Networks
  - WER: Open Voc: 17%, Closed: 13%

System output:
- dit dia rebere$ de Hieronym Ponsich corder de Bar^a. fill de Jua$ Pon=
- Human transcription
  - dit dia rebere$ de Hieronym Ponsich corder de Bar^a. fill de Jua$ Pon=
First results


