Roots of Gender Equality:
The Persistent Effect of Beguinages on Attitudes Toward Women

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Motivation and Research Question

- Gender equality is conducive to economic prosperity.
  - Decreased fertility allowing human capital accumulation: de Moor and Van Zanden (2010)
    - Empirical evidence in present time: Klasen (2002) and Klasen and Lamanna (2009)
- Origins of gender equality less clear:
  - Physiological differences: Galor and Weil (1996), Alesina et al. (2013).
  - Historical accidents: Grosjean and Khattar (2015).

This Paper

- **Economic and cultural** origins of gender equality.
  - Changes in women's bargaining power.
  - Transmssion of gender-egalitarian culture.
- Beguinages:
  - Female-only, semi-religious, medieval communities.
- Research Question:
  - Higher gender-equality during the 19th century in regions that hosted medieval beguinages?

The Beguine Movement

- Characteristics:
    - self-supporting, semi-religious communities of
    - **unmarried or widowed** women of
    - **different** socio-economic origins;
    - independent of any male authority.
- Where?
    - **The Low Countries** and neighbouring regions in France and Germany.
- When?
   - Beginning of the **13th century** onward.

The Beguines

- **Did not take vows** but followed a **semi-religious** life.
- **Kept and accumulated** wealth.
- Allowed to **leave the beguinage**.
- Economic activities to self-sustain:
  - market-oriented: teachers, nurses, labourers, traders;
- No common rules and lack of central coordinating authority.
- Independent of male authority.
- Urban based.
  - Tolerated by ecclesiastic and secular authorities
  - Two types of beguinages:
    - Court beguinage: houses surrounding a central church.
    - Convent beguinages: resembling a medieval city.

Evolution of Beguinages

Total number of cities with at least one beguinage.
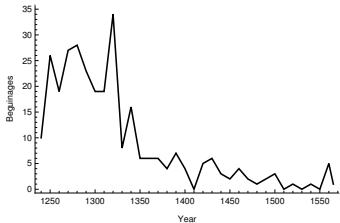
Number of new beguinages created per decade.

Source: *Simons (2010), p. 256*

Geographical Distribution

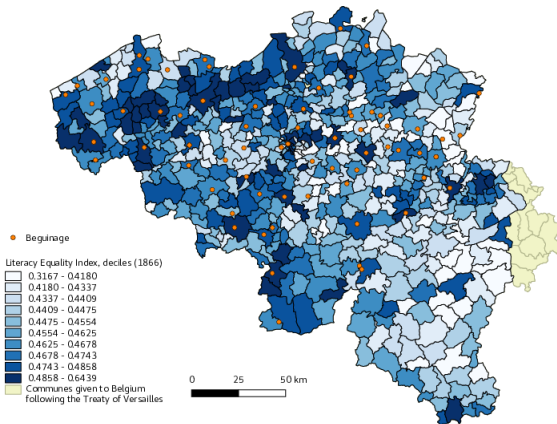Figure: Beguinages in Belgium and measure of literacy equality

Preview of the Results

- In municipalities with a beguinage, literacy rate between men and women were more similar.
- Our results are strengthened when we use an instrumental variable approach correcting for the potential endogeneity of beguinage location.
- Results are in general robust to a host of additional covariates and sub-samples.

Mechanism

- From female associations to gender equality:
  - Beguinages represented a new option for girls.
    - The society encouraged marriage or monastic life.
    - Beguinages allowed singlehood.
  - Access to a wider choice-set increases girls' bargaining power.
  - Women achieve outcomes that are closer to the male counterpart.
- Persistence:
  - Children observe that men and women are more similar.
  - This believe is passed over to new generations.
  - *Even though beguines did not bear children*.

Data

- Exploit **cross-section** variation in beguinage location to identify their effects on gender-related outcomes.

- One country: Belgium.

- Census data:
  - Earliest possible data: census of 1866.
  - **Not** individual data. Information is **aggregated** at the municipal level.

- We measure gender equality comparing:
  - Female literacy **compared** to male literacy.

Econometric Specification

- $y_{i,r} = \alpha + \beta beguinage_{i,r} + X_{i,r}\gamma + \kappa_r + \epsilon_{i,r}c$

- RHS - We use three indicators to account for beguinages:
  - Dummy variable - whether a city ever had a beguinage,
  - Exposure time to beguinage presence,
  - Five-level indicator combining presence and time.

- LHS - Outcomes of interest (measured in 1846 or 1866):

  - Literacy gap: $\frac{Number\ of\ literate\ women}{Number\ of\ literate\ men}$
  - Robustness:

    - Female literacy share: $\frac{Number\ of\ literate\ women}{Number\ of\ literate\ women + Number\ of\ literate\ men}$

    - Female literacy index: $\frac{Share\ of\ literate\ women}{Share\ of\ literate\ men}$

Summary Statistics

	Mean	Std.Dev.	Min.	Max.
Beguinage presence				
Beguinage (0/1)	0.026	0.159	0	1
Intensity: No Beg.	0.974	0.159	0	1
Intensity: 1 Beg., < 200 years	0.007	0.086	0	1
Intensity: 1 Beg., > 200 years	0.012	0.108	0	1
Intensity: > 1 Beg., > 200 years	0.003	0.054	0	1
Intensity: > 3 Beg., > 200 y.	0.004	0.061	0	1
Exposure (centuries)	0.134	1.065	0.000	22.440
Outcomes				
Lit. equality index, 1866	0.822	0.137	0.236	1.808
Female lit. share, 1866	0.448	0.042	0.191	0.644
Female lit. index, 1866	0.856	0.122	0.256	1.601
Controls				
Total men, 1866 (thousands)	0.949	2.622	0	74
Total women, 1866 (thousands)	0.944	2.909	0	84
Nuptiality men, 1866	0.360	0.036	0.181	0.669
Nuptiality women, 1866	0.398	0.037	0.202	0.626
Fem. monas.	0.030	0.184	0	2
Masc. monas.	0.024	0.170	0	3
Other monas.	0.072	0.259	0	1
Distance river (km)	9.082	8.757	0.002	52.396
Distance Leuven (km)	69.560	33.467	0.377	167.249
Min. distance beguinage (km)	16.265	18.164	0.000	122.010
Distance big city (km)	18.577	19.988	0.000	114.328
Observations	2711			

OLS Results: Female literacy

	Dep. variable: Lit. equality index, 1866					
	Baseline		Fixed-effects		Geography	
	(1)	(2)	(3)	(4)	(5)	(6)
Beguinage (0/1)	0.144 (0.019)*** [0.019]***		0.153 (0.019)*** [0.020]***		0.131 (0.019)*** [0.018]***	
Exposure (centuries)		0.021 (0.003)*** [0.003]***		0.022 (0.003)*** [0.003]***		0.018 (0.003)*** [0.003]***
Fixed-effects	No	No	Canton	Canton	Canton	Canton
Geography	No	No	No	No	Yes	Yes
Observations	2549	2549	2549	2549	2447	2447
R^2	0.030	0.029	0.203	0.200	0.228	0.223

Threats to Identification

- Potential endogeneity of beguinage location:
  - selection of towns that were more favourable to women.

- Instrumental variable approach:
  - Binary variable indicating whether a town obtained a "municipal charter" before the 13th century.

Treats to Idenfication: Instrument

- Municipal charters typically:
  - increased municipal autonomy,
  - conveyed benefits for citizens: partial exemption from war and a municipal judicial system,
  - allowed towns to organize a market and establish gilds, and
  - charters granted after the lord secured a hefty payment.

- Considering the secular occupations of beguines (education, spinning, trade), towns with a municipal charter are likely to attract them as they can be more economically dynamic (e.g. presence of a market).

Threats to Identification: Instrument

- Exclusion restriction:
  - Historical evidence suggests that the acquisition of a charter was not introducing any institution promoting gender equality.
  - Towns granted a municipal charter could have grown larger and, thus, education would have been a more productive investment.
    - We compute the growth rate of towns between 1437 and 1866 (only for a sub-sample).
    - We cannot reject equal growth rate for those with and without a municipal charter.
  - Our outcome of interest is **not literacy per se** but the comparison between male and female outcomes.

IV Results: Female Literacy

	Dep. variable: Lit. equality index, 1866	
	Panel A: IV results	
Beguinage (0/1)	0.195	
	(0.034)***	
Exposure (centuries)		0.029
		(0.006)***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Fist-satge F-val.	76.849	40.349
Observations	2447	2447
R^2	0.224	0.217
	Panel B: First stage	
Municipal charter	0.673	4.460
	(0.077)***	(0.702)***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Observations	2447	2447
R^2	0.436	0.520

Beguinages and Gender Equality

- Possible mechanism linking beguinages with gender equality:
  - Increased opportunities beyond marriage and monastic life
    Better bargaining position for women leading to better outcomes.
  - Access to a monastery should have similar effects:
  - Distinguish between monastic orders:
    - Open: in touch with the population, alternative to marriage.
    - Enclosed: not in touch, catered women with religious vocation.

	Dep. variable: Lit. equality index, 1866			
Beguinage (0/1)	0.131		0.135	
	(0.019)***		(0.020)***	
	[0.018]***		[0.020]***	
Exposure (centuries)		0.018		0.019
		(0.003)***		(0.004)***
		[0.003]***		[0.003]***
Fem. monastery	0.065	0.060		
	(0.017)***	(0.020)***		
	[0.016]***	[0.019]***		
Female monasteries				
No mon.			Ref.	Ref.
1 open			0.087	0.082
			(0.030)***	(0.032)**
			[0.033]***	[0.035]**
2 open			0.117	0.098
			(0.048)**	(0.062)
			[0.046]**	[0.058]
1 closed			0.031	0.026
			(0.051)	(0.049)
			[0.046]	[0.044]
1 unknown			0.036	0.031
			(0.022)	(0.025)
			[0.021]	[0.020]
Masc. monastery	−0.004	−0.012	−0.005	−0.013
	(0.013)	(0.016)	(0.013)	(0.016)
	[0.013]	[0.016]	[0.013]	[0.015]
Other monastery	0.021	0.018	0.022	0.019
	(0.022)	(0.021)	(0.022)	(0.021)
	[0.015]	[0.016]	[0.016]	[0.017]
Fixed-effects	Canton	Canton	Canton	Canton
Geography	Yes	Yes	Yes	Yes
Beg. (0/1) = Fem. mon. or 1 open mon., (p-val)			0.017	0.127
Observations	2447	2447	2447	2447
R^2	0.228	0.223	0.229	0.224

- Alternative LHS variables (OLS/IV). `Alt. LHS vars.`
- Alternative RHS variable (OLS). `Alt. RHS var.`
- Only towns 5km, 10km and 20km away from a beguinage (OLS/IV). `Buffers`
- Removing municipalities with an ongoing beguinage at census time (OLS/IV). `Ongoing`
  - Municipal charter (instrument) as regressor (OLS).
- Higher level of aggregation (cantons) (OLS/IV). `Canton level`
- Endogeneity: abandoned beguinages (OLS). `Abandoned`
- Distances and network structure (OLS/IV). `Distances`

Concluding Remarks

- We provide new evidence on the long-lasting effects institutions have on gender-related outcomes.

- We find that towns that held a beguine community, were more favourable towards women:

  ○ literacy rates were more similar,

- We can derive a causal effect between the presence of beguine communities and improved female outcomes.

- Results are compatible with a model of cultural transmission highlighting the role of the marriage market.

APPENDIX

Robustness: Female Lit. Share, OLS

	Dep. variable: Female lit. share, 1866					
	Baseline		Fixed-effects		Geography	
	(1)	(2)	(3)	(4)	(5)	(6)
Beguinage (0/1)	0.041		0.043		0.037	
	(0.004)***		(0.005)***		(0.005)***	
	[0.005]***		[0.005]***		[0.005]***	
Exposure (centuries)		0.006		0.006		0.005
		(0.001)***		(0.001)***		(0.001)***
		[0.001]***		[0.001]***		[0.001]***
Fixed-effects	No	No	Canton	Canton	Canton	Canton
Geography	No	No	No	No	Yes	Yes
Observations	2549	2549	2549	2549	2447	2447
R^2	0.025	0.024	0.204	0.201	0.228	0.224

Robustness: Female Lit. Share, IV

	Dep. variable: Female lit. share, 1866	
	Panel A: IV results	
Beguinage (0/1)	0.056	
	(0.010)***	
Exposure (centuries)		0.008
		(0.002)***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Fist-satge F-val.	76.849	40.349
Observations	2447	2447
R^2	0.224	0.219
	Panel B: First stage	
Municipal charter	0.673	4.460
	(0.077)***	(0.702)***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Observations	2447	2447
R^2	0.436	0.520

Robustness: Female Lit. Index, OLS

	Dep. variable: Female lit. index, 1866					
	Baseline		Fixed-effects		Geography	
	(1)	(2)	(3)	(4)	(5)	(6)
Beguinage (0/1)	0.055		0.061		0.050	
	(0.011)***		(0.012)***		(0.012)***	
	[0.012]***		[0.014]***		[0.014]***	
Exposure (centuries)		0.008		0.007		0.005
		(0.002)***		(0.002)***		(0.002)**
		[0.002]***		[0.002]***		[0.002]**
Fixed-effects	No	No	Canton	Canton	Canton	Canton
Geography	No	No	No	No	Yes	Yes
Observations	2549	2549	2549	2549	2447	2447
R^2	0.005	0.005	0.205	0.203	0.225	0.223

	Dep. variable: Female lit. index, 1866	
	Panel A: IV results	
Beguinage (0/1)	0.066 (0.025)***	
Exposure (centuries)		0.010 (0.004)**
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Fist-satge F-val.	76.849	40.349
Observations	2447	2447
R^2	0.225	0.222
	Panel B: First stage	
Municipal charter	0.673 (0.077)***	4.460 (0.702)***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Observations	2447	2447
R^2	0.436	0.520

	Dep. variable: Lit. equality index, 1866	
No Beg.	Ref	
1 Beg., < 200 years	0.081	
	(0.025)***	
	[0.019]***	
1 Beg., > 200 years	0.151	
	(0.033)***	
	[0.031]***	
> 1 Beg, > 200 years	0.230	
	(0.053)***	
	[0.044]***	
> 3 Beg., > 200 years	0.103	
	(0.025)***	
	[0.023]***	
Alt. exposure (centuries)		0.026
		(0.003)***
		[0.003]***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Observations	2447	2447
R^2	0.231	0.227

Robustness: Buffers around beguinages, OLS

	Dep. variable: Lit. equality index, 1866					
	5 km		10 km		20 km	
Beguinage (0/1)	0.140 (0.031)*** [0.020]***		0.137 (0.022)*** [0.019]***		0.132 (0.019)*** [0.018]***	
Exposure (centuries)		0.019 (0.005)*** [0.003]***		0.019 (0.004)*** [0.004]***		0.018 (0.003)*** [0.003]***
Fixed-effects	Canton	Canton	Canton	Canton	Canton	Canton
Geography	Yes	Yes	Yes	Yes	Yes	Yes
Observations	245	245	907	907	1975	1975
R^2	0.610	0.583	0.363	0.353	0.246	0.240

	5 km		10 km		20 km	
			Dep. variable: Lit. equality index, 1866			
			Panel A: IV results			
Beguinage (0/1)	0.133		0.152		0.193	
	(0.034)***		(0.027)***		(0.033)***	
Exposure (centuries)		0.022		0.024		0.029
		(0.006)***		(0.005)***		(0.006)***
Fixed-effects	Canton	Canton	Canton	Canton	Canton	Canton
Geography	Yes	Yes	Yes	Yes	Yes	Yes
Fist-satge F-val.	170.589	30.203	622.217	52.178	74.291	39.604
Observations	245	245	907	907	1975	1975
R^2	0.609	0.582	0.363	0.350	0.241	0.232
			Panel B: First stage			
Municipal charter	0.873	5.392	0.891	5.619	0.668	4.406
	(0.067)***	(0.981)***	(0.036)***	(0.778)***	(0.078)***	(0.700)***
Fixed-effects	Canton	Canton	Canton	Canton	Canton	Canton
Geography	Yes	Yes	Yes	Yes	Yes	Yes
Observations	245	245	907	907	1975	1975
R^2	0.684	0.771	0.558	0.636	0.435	0.525

Robustness: No open beguinage, instrument, OLS

	Dep. variable: Lit. equality index, 1866	
	Panel A: No open beguinage	
Beguinage (0/1)	0.129	
	(0.022)***	
	[0.020]***	
Exposure (centuries)		0.017
		(0.004)***
		[0.003]***
Observations	2437	2437
R^2	0.223	0.218
	Panel B: Municipal charter	
Beguinage (0/1)	0.107	
	(0.026)***	
	[0.024]***	
Exposure (centuries)		0.013
		(0.004)***
		[0.004]***
Municipal charter	0.059	0.074
	(0.030)**	(0.025)***
	[0.025]**	[0.021]***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Observations	2447	2447
R^2	0.230	0.226

Robustness: No open beguinage, IV Back

	Dep. variable: Lit. equality index, 1866	
	Panel A: IV results	
Beguinage (0/1)	0.212	
	(0.045)***	
Exposure (centuries)		0.033
		(0.008)***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Fist-satge F-val.	46.976	21.409
Observations	2539	2539
R^2	0.206	0.199
	Panel B: First stage	
Municipal charter	0.605	3.902
	(0.088)***	(0.843)***
Fixed-effects	Canton	Canton
Geography	Yes	Yes
Observations	2539	2539
R^2	0.388	0.467

Robustness: Canton aggregation level, OLS

| | Dep. variable: Lit. equality index, 1866 | | | | | |
| | Baseline | | Fixed-effects | | Geography | |
	(1)	(2)	(3)	(4)	(5)	(6)
Beguinage (0/1)	0.028 (0.013)** [0.014]**		0.052 (0.011)*** [0.008]***		0.046 (0.014)*** [0.008]***	
Exposure (centuries)		0.006 (0.001)*** [0.002]***		0.007 (0.001)*** [0.001]***		0.006 (0.002)*** [0.001]***
Fixed-effects	No	No	Arrond.	Arrond.	Arrond.	Arrond.
Geography	No	No	No	No	Yes	Yes
Observations	191	191	191	191	191	191
R^2	0.029	0.076	0.521	0.549	0.700	0.711

	Dep. variable: Fem. equality index, 1866	
	Panel A: IV results	
Beguinage (0/1)	0.070	
	(0.024)***	
Exposure (centuries)		0.009
		(0.003)***
Fixed-effects	Arrond.	Arrond.
Geography	Yes	Yes
Fist-satge F-val.	34.995	14.762
Observations	190	190
R^2	0.643	0.686
	Panel B: First stage	
Municipal charter	0.662	5.304
	(0.112)***	(1.380)***
Fixed-effects	Arrond.	Arrond.
Geography	Yes	Yes
Observations	190	190
R^2	0.718	0.585

	Dep. variable: Lit. equality index, 1866			
	1st cent.	10th cent.	20th cent.	30th cent.
Short beg.	0.049	0.055	0.067	0.082
	(0.047)	(0.041)	(0.024)***	(0.024)***
	[0.047]	[0.039]	[0.022]***	[0.018]***
Long. beg.	0.141	0.142	0.149	0.155
	(0.021)***	(0.021)***	(0.022)***	(0.025)***
	[0.019]***	[0.019]***	[0.020]***	[0.022]***
Fixed-effects	Canton	Canton	Canton	Canton
Geography	Yes	Yes	Yes	Yes
Nr of Short beg.	6	7	14	21
Observations	2447	2447	2447	2447
R^2	0.229	0.229	0.230	0.230

Robustness: Distances and network, OLS Back

	Dep. variable: Lit. equality index, 1866		
Min. Distance Beg. (log-km)	−0.029 (0.006)*** [0.007]***		
IDW		0.207 (0.034)*** [0.030]***	
IDW, exposure			0.194 (0.031)*** [0.030]***
Fixed-effects	Canton	Canton	Canton
Geography	Yes	Yes	Yes
Observations	2447	2375	2375
R^2	0.216	0.229	0.228