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Son Preference in a Sharecropping Society
Gender Composition of Children and Reproduction in a Pre-Transitional Italian Community

Before the demographic transition, were couples able to control their fertility? Can we find evidence for this by comparing households with different occupations, in which the sex composition of the offspring may reveal a preference for children of a given sex and reproductive behaviours that differ in response to economic factors? To address this question, Matteo MANFREDINI, Marco BRESCHI *and* Alessio FORNASIN *make use of an original database on the fertility of nineteenth-century Tuscan families that combines information from parish registers and from a local census of inhabitants. They compare the probability of further births according to the sex composition of surviving children, focusing on four social groups: day labourers, sharecroppers, smallholders and non-agricultural occupations. The authors find evidence that sharecroppers tended to favour large families in order to secure a male heir.*

Historical demographic studies have already revealed the existence of different levels of natural fertility in pretransitional populations with no deliberate or effective system of fertility limitation. Demographic micro-level studies had always shown that nineteenth-century Italian sharecroppers, a landless peasant group that tilled the land of absentee landowners, were characterized by high levels of natural fertility (Della Pina, 1993; Manfredini and Breschi, 2008). Many scholars saw in this higher fertility the consequence of the strict relationship between household workforce and competition for the best farms and best contractual conditions (Biagioli, 1986; Doveri, 2000). In a context where agriculture was still labour-intensive, the domestic workforce, and the capacity to guarantee it through reproduction, was a decisive factor

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in securing a contract. Obviously, the sharecropping household workforce was strictly connected to the number of working male members. In our opinion, the presence of males in sharecropping households was so crucial that sharecroppers tended to increase their fertility beyond what was initially desired. This hypothesis was tested on a mid-nineteenth-century community of Tuscany, Casalguidi, where longitudinal reproductive life-histories of women were analysed for the period 1819-1859.

I. Sex preference and gender composition of children. Theoretical background

The issue of gender composition of children and its effect on fertility has been largely debated in recent years. This relationship has been usually explained in terms of the value of children (Nauck, 2005). According to Bulatao (1981), having another child has values and disvalues that are parity-dependent. At lower parities (1-2), emotional and psychological factors prevail and sex preference has no role. This latter factor becomes determinant at medium parities (3-4), however, when the parents' goal is to balance the sex composition of their offspring. Finally, at higher parities (5+) there is a clear predominance of economic motivations. However, Bulatao based his theory on the analysis of only three contemporary populations, none of which was from Europe. This contrasts with the wide acknowledgement that the value of children is a concept that varies over time and across populations. Williamson (1976) pointed out that differences of sex preference in time and space may be determined by economic, social, and psychological factors. The first element concerns the productivity and the capacity of each gender to produce income through work, the second reflects social and cultural values attached to each sex, such as inheritance practices and gender discrimination, while the third points at security and caring practices, such as in old age. These characteristics are frequently found in traditional patriarchal societies characterized by a strong gender inequality grounded on socio-cultural values such as the higher economic net utility of sons compared to daughters, the duty to provide security in old age, and a system of inheritance and transmission of the family name strictly through the male line. This explains why the majority of studies on gender preferences have focused on Asian populations such as India, China, Bangladesh, and Japan, all countries with a long tradition of patriarchal family values (Bairagi, 2001; Das Gupta et al., 2003; Guilmoto, 2012; Park, 1983; Tang and Sharp, 2011). In those populations, preference for sons still persists today (Arnold and Kuo, 1984; Cruz and Vicerra, 2013; Murphy et al., 2011), although mixed-sex sibships are increasingly common (Allendorf, 2012).

Conversely, a balanced gender composition of children is the norm in many contemporary Western societies (Arnold, 1997; Bongaarts, 1998; Hank and Kohler, 2000, 2003; Kippen et al., 2007; Marleau and Maheu, 1998; Pollard

and Morgan, 2002). The authors attribute this phenomenon to a more general shift towards shared gender roles, to a behaviour reflecting preferences for a child of the same sex as oneself – the so-called homophily hypothesis (Mills and Begall, 2010) – and to economic reasons that persuade women to stop their childbearing after a second birth irrespective of the gender composition of previous births. More generally, it has been attributed to the modernization process.

However, up to now very few studies have provided evidence of the presence or otherwise of sex preferences in pre-industrial Europe, which is quite strange because patriarchal family systems were common in various parts of the continent and almost everywhere males were valued more than females. In our opinion, the reason for this dearth of studies is twofold. First, the effects of gender composition on fertility are lower in high-fertility populations because couples have a larger average completed family size and are thus more likely to obtain their desired gender composition. Conversely, in low-fertility populations, the desire for a specific sex composition of children should favour parity progression and, therefore, higher fertility (Hank and Kohler, 2000; Wood and Bean, 1977). Second, studies on historical Europe have rarely confirmed the existence of excess female mortality similar to that found in Asian populations (Knodel and De Vos, 1980), thus providing little incentive for more in-depth studies on this question. As suggested by Lynch (2011), the absence of strong patterns of sex preference, especially son preference, might be grounded in the historical, economic, and cultural context of pre-transitional Europe, where selective infanticide did not exist and alternative options, such as abandonment in foundling homes, were available to control the size and sex composition of offspring. However, such considerations and interpretations were primarily grounded on studies based on aggregate data and descriptive statistics, using methods that cannot control for confounding factors and are therefore unfit for studying the complexity of human behaviours behind reproductive choices. The few studies analysing pretransitional populations using micro-level data have in fact demonstrated that son preference was present even in some pretransitional western societies (Bohnert et al., 2012; Sandström and Vikstrom, 2015). However, up to now no study has specifically concerned patriarchal societies of Southern Europe, characterized by stronger kin ties, patrilocality, and stronger gender segregation than in central and northern Europe. Our hypothesis is that son preference should have been a specific social and cultural characteristic of these populations, with the consequence of increasing fertility among those social groups where males clearly had higher economic value than females. The effect on fertility could be direct or indirect. Son preference could directly affect completed family size through a socio-psychological mechanism whereby "a mother does not feel fulfilled somehow until she gives birth to a son" (Freedman and Coombs, 1974). On the other hand, son preference could indirectly increase fertility through a gender differential in the length of the breastfeeding period. In

societies preferring sons, mothers might be less careful and protective with their daughters (Das Gupta, 1987), and therefore liable to interrupt breastfeeding prematurely in order to return to work earlier.

The mid-nineteenth century society of Tuscan sharecroppers was undoubtedly a traditional patriarchal society, characterized by strong gender inequality and a rigid gender division of work within the household, with sons being valued over daughters on account of their higher economic utility. Moreover, the custom of patrilocality associated with a joint family system meant that daughters were not indispensable, even for the care of elderly household members: in old age, men were more likely to live with daughters-in-law than biological daughters. Therefore, we believe that a need for sons may have encouraged sharecroppers to increase their fertility.

II. Available sources

Unlike many other studies on pretransitional populations, here we use information taken from both vital registers and census-like sources. Information recorded on the parish registers of baptisms, burials, and marriages were integrated with information taken from *Status Animarum* (Register of Souls) from 1819 to 1859. *Status Animarum* was a sort of census recorded by the parson during his customary visit to families at Easter. It contained information such as name, surname, age, marital status and relationship of each household member to the household head, including servants and non-kin alike, and in some cases even an indication of the house owner. Crosschecking information between vital registers and *Status Animarum* enabled us to construct a new longitudinal meta-source with individual and household data, containing the life histories of all the inhabitants of Casalguidi enriched by year-by-year information on the household context, household composition, and the local kinship network (Manfredini, 1996). No direct information on migration is available. However, we assume that all individuals who disappeared from *Status Animarum* without being recorded in the death register are emigrants.

Socioeconomic data were obtained from the Family Tax registers, a civil source that provides annual information on the occupation of household heads. Four occupational categories according to wellbeing, access to land, and marriage pattern were defined. Day labourers and sharecroppers are two landless groups with different levels of access to land and different marriage patterns; smallholders is a landed category with a marriage pattern similar to that of sharecroppers, while artisans and the well-off were grouped together as categories not directly involved in farm labour. A residual group of unknown occupations includes all household heads with no indication of socioeconomic status or occupation.

Year-by-year information on household composition and socioeconomic status enables us to go well beyond the traditional limits of family reconstitution, which usually limits the scope of analysis to small and selected population sub-samples. Our selection of couples does not consider only endogamous marriages, as typical of family reconstitution, but also exogamous marriages of couples who wedded in the wife's parish but resided in that of the husband (Manfredini, 2003). All these unions are under continuous observation and the spouses' life histories are known from marriage to marital dissolution or emigration. As this latter event can be dated thanks to *Status Animarum,* we can also include "unstable" families, likely characterized by a different fertility (and mortality) pattern with respect to stable ones (Ruggles, 1992). Crosschecking information between *Status Animarum* and vital events also allows us to reduce bias due to under-registration of deaths, notably for spouses. If one of the spouses died outside Casalguidi in year *t*, his/her surviving spouse was recorded as a widow(er) in the *Status Animarum* of year *t*+1, allowing us to know the year of marital dissolution.

III. The sharecropping community of Casalguidi, 1819-1859

Socioeconomic description

Casalguidi is a Tuscan parish located in the present-day province of Pistoia, not far from Florence. In the period under study, it counted about 2,400 inhabitants on average, living partly in the plain and partly scattered on the hills surrounding the main village. Here, as elsewhere in rural Tuscany, agriculture was by far the most important productive and economic sector. About 80% of households were involved in agricultural work, resulting in generally low levels of wellbeing (Manfredini and Breschi, 2008). The low life expectancy at birth for both males and females – around 35 years – is further evidence of the population's meagre living standards and economic conditions.

The most common form of land tenure was sharecropping. As many as 48.2% of households were headed by sharecroppers, 12.4% by day labourers and 18.2% by smallholders. The remaining 21.2% were not involved in farm labour, and most of their household heads were artisans. Sharecropping was a form of land tenure based on an equal sharing of farm produce between the landlord and the sharecropping family. The entire household was contractually tied to the farm or land they lived on (Biagioli, 1986; Francini, 1984; Poni, 1978), and was considered as a single production and consumption unit. Sharecroppers lived on a farm that the landlord considered appropriate for their household size and labour capacity, so the economic conditions of the sharecropping family and landlord's economic return were strictly dependent on the ability to maintain an unvarying workforce over time. The essential balance between farm size and workforce was a fundamental clause in the

renewal of the contract. These productive and economic factors were among the most important reasons why males were much more valued than females in sharecropping households.

This different value of men and woman was also reflected in the gender hierarchy within the household and in the marriage pattern. The strictly hierarchical sharecropping family structure had a male, usually the oldest one, as household head. Only the household head was authorized to sign contracts and communicate with the landlord, and since there was no formal retirement, he retained this position until death. When the household head died, a son took his place. A rigid division of work, duties, and responsibilities separated males from females as well as elderly individuals from the youngest. Men spent most of their time on the land, whereas females were responsible for housework, cooking, care of children and other domestic duties. The wife of the household head ruled over the other co-residing females.

The marriage pattern was strictly patrilocal. Sons remained in the parental household after marriage to ensure the present and, through reproduction, future workforce, whereas daughters were required to enter the husband's household, thereby creating a network of allied and kindred families. Household heads exercised strict control over the marriage practices of household members in order to guarantee a certain balance between household size and resources. This distinct marriage behaviour was at the root of the sharecroppers' joint family system.

Although day labourers were landless as well, they had no direct access to land and lived in the village. Since they did not constitute a production unit, the household structure was not a decisive factor for finding work or having a contract renewed. Every single member of a day labourer's household had to do their best to contribute to the meagre family income. While males were usually hired on a daily basis by tenants and sharecroppers when demand for agricultural workers was high, females could find employment as servants or work as day labourers themselves. In the end, although the gender power relationship was strongly asymmetric even among day labourers, the lack of any interest in maintaining a domestic male working force may, in our opinion, have reduced parents' preference for sons.

Some remarks on the fertility pattern

In the period 1819-1859, the population of Casalguidi was still far from any sign of fertility decline, showing the typical demographic characteristics of a pretransitional population. The total marital fertility rate above age 20 was around 8.1 children per married woman (Manfredini and Breschi, 2008), a figure in line with the fertility standards of mid-nineteenth century Tuscany (Livi Bacci and Breschi, 1991). However, analysis of the real mean offspring size is, for the purpose of this paper, more interesting than the total fertility rate, which is only a theoretical index under the assumption of zero female

mortality between 15 and 49 years. On average, the number of offspring was about 5.7 children per married woman at the end of their reproductive lives, with strong differentials by occupation: 6.2 children for sharecroppers and only 5.0 for non-sharecropping women. However, these values are scarcely representative of desired family size due to the high levels of infant and child mortality, which reduced each generation by about 40-50% before age 10. Thus, when net number of children at mother's age of 45 years is taken into account, the overall figure drops to 4.2 children per married woman with completed fertility. When disaggregated by occupation, it highlights the different impact of infant and child mortality in the various activity sectors: sharecropping married women had 4.6 surviving children on average at age 45 years, versus only 3.2 for non-sharecroppers, reflecting the lower mortality of the youngest among sharecroppers (Breschi et al., 2000).

IV. The influence of gender composition on fertility: a longitudinal analysis

The logistic model

Event history analysis was used to assess the effects of gender composition of surviving children on the risk of having another child (Allison, 1984; Alter, 1998). Due to the annual timing of *Status Animarum*, the statistical approach used here entails the use of discrete-time models based on logistic regression, in which the hazard model estimates the odds of having another child in any given year. This implies not only using woman-years as the analysis time unit, but also that each woman is likely to contribute more than one time unit to the dataset. In the presence of repeated events, such as childbirth, these individual observations will be correlated in the case of unobserved characteristics, fixed over time, and capable of affecting fertility. In the end, the observation years for the same person form clusters of correlated observations (Hosmer and Lemeshow, 2000), potentially biasing the estimation of standard errors (Tsuya et al., 2010). Although some authors suggest, for fertility models, that each birth be treated as independent (Tuma and Hannan, 1984), others support the use of random-effect models to account for such a correlation structure between episodes. In this article, both the models with and without random effects are tested to check for the existence of random effects and consistency of results. In the model without random effects, standard errors estimates will be adjusted in any case using Huber/White's formula, a method usually indicated for heteroskedasticity and cluster-correlated data (Froot, 1989).

Six different categories of gender composition are considered in the models: a balanced gender composition (reference category), more daughters than sons, more sons than daughters, only daughters, only sons, and, finally, no surviving

children. This variable is continuously updated over time, discarding dead children, and adding newborns year after year.

Different models were estimated to take account of Bulatao's argument that gender preference is parity dependent. Even though a correct approach would entail modelling each parity transition separately, only three models were estimated in consideration of the small sample size. The first model concerns lower parity transitions (from parity 3 to 4 and 4 to 5), whilst the second concerns higher transitions starting from parity 5 onwards. The third model is an overall model concerning all transitions from parity 3 onwards. The parity cutoff at 3 is consequential to the categories used to define the sex-composition of surviving children, in which at least three children are necessary to estimate the effect of having more children of a given sex than children of the opposite sex when simultaneously considering another category capturing the effects associated to the total absence of children of a specific sex. If some effects associated to the gender composition of surviving children should emerge, it is essential to assess whether they were widespread in the population or limited to some social strata. In the former case, sex preference would likely be the consequence of a general cultural value shared by the whole community, whereas, in the latter case, it would be associated to specific socioeconomic factors. This is the reason why a further model with the interaction between household head's occupation and offspring sex composition was estimated.

The variables

The population at risk counts 406 married women between 20 and 49 years of age whose dates of marriage and birth are both known, and who are under continuous observation from marriage to the end of the observation period, marriage dissolution, emigration, or age 50.

The models describe the fertility of women with at least three surviving children. They control for woman's age, age at first birth, time since last birth, parity (number of surviving children), and husband's occupation.

Mother's age is a time-dependent variable that controls for the biological relationship between age and fertility typical of pretransitional populations, which assumes a decrease of fertility with age. Age at first birth indicates actual entry into the childbearing phase, and it is usually closely connected with age at marriage. In Casalguidi, it was 24.7 years on average between 1819 and 1859. In pretransitional populations, women entering childbearing at later ages should have a lower completed family size, but, once controlled for age, the pace of childbearing should be more rapid in an attempt to make up for lost time.

Time since last birth is again a time-dependent variable. Like woman's biological age, it is usually associated with fecundability, in the sense that longer interbirth intervals might indicate lower fecundability. It is also a factor implicated in a possible mechanism of fertility control. In fact, as previously

mentioned, some studies have demonstrated the existence of specific spacing behaviours that may result in fertility limitation in Ancien Régime populations (Van Bavel, 2003, 2004), but differentials in spacing behaviours may be also indicative of gender preferences (Mace and Sear, 1997; Nath et al., 2000). Moreover, the interval after a male birth could be longer than the interval after a female birth (Kemkes, 2006), thereby affecting fertility indirectly. In this study, we use a categorical variable considering shorter intervals, namely less than 2 years, average interbirth intervals (2-3 years) as the reference category, and longer intervals (4+ years).

Finally, we introduce husband's occupation, which is once again time-dependent. Annual changes in the husband's occupation were checked on *Status Animarum*, parish registers (birth or death certificates), and tax registers. Parity was initially included in the models in order to control for woman's previous reproductive history and reproductive load, as typical of fertility models. However, after collinearity among covariates was evaluated by calculating the variance inflation factor (VIF), it was dropped due to its high collinearity with mother's age (VIF > 10) in each of the models presented in Table 2.

V. Results

Table 1 reports the proportion of the total variance accounted for by the random effect in the three models. As percentage values are low and not statistically significant in each of the models, we must reject the hypothesis of substantial correlation within the clusters of individual annual observations for the same mother (Table 1). However, the outcomes are not substantially different from the estimates from standard logistic models (Table 2), so only the results of these latter models will be discussed below.

Beyond the expected negative biological relationship between age and fertility, the model proves that in Casalguidi the "normal" birth interval was 2-3 years, with shorter and longer intervals associated with significantly lower risks of having another child. No statistically significant effect on fertility was detected for age at first birth. As for differentials by occupation, it emerges that day labourers had the lowest fertility in all the models shown in Table 2, presenting significantly lower risks (odds ratio 11% to 33% lower) of having another birth compared to sharecroppers. On the other hand, those in non-agricultural occupations are 28% more likely (odds ratio 1.28) than sharecroppers to have another child at higher transitions (parity 5+), which simply confirms the results of a previous study (Manfredini and Breschi, 2008).

Regarding the effect on the fertility of gender composition of surviving children, no evidence of any significant differential risk of having another birth was found.

Table 1. Random effect model of having another child. Effect of gender composition of surviving children on fertility, Casalguidi, 1819-1820, married women aged 20-49

Variables	Parity 3-4		Parity 5+		Parity 3+	
	Frequency	OR	Frequency	OR	Frequency	OR
Sex composition of surviving children						
Ref. Sons = daughters	23.6	1	18.8	1	21.0	1
Daughters > sons	16.0	0.97	28.3	0.91	22.6	0.97
Sons > daughters	15.4	1.12	36.2	1.04	26.6	1.13
Only daughters	24.8	1.05	7.9	1.16	15.7	1.08
Only sons	17.5	1.25	8.5	0.71	12.7	1.04
No surviving children	2.7	1.66	0.3	1.97	1.4	1.71
Log-likelihood	−1,084.2		−1,080.8		−2,174.7	
Random effect (% variance)	0.005		< 0.001		0.010	
Likelihood ratio test (p-value)	0.35 (0.395)		0.001 (0.999)		0.28 (0.299)	

Notes: OR = odds ratio. Frequency = Percent relative frequency. The model also controls for mother's age, age at first birth, and time since last birth. The likelihood ratio test compares the models with and without random effects.
Source: Authors' calculations.

However, although the result is not statistically significant, women with no surviving children show a markedly higher risk of experiencing another childbirth compared to women with a balanced sex composition. This risk ranges from +66% in the parity 3-4 model to +97% in the parity 5+ model. The very small number of woman-years in this category (54 and 7, respectively) is a likely reason for the lack of statistical significance of the coefficients. In the end, these results seem to suggest the absence of any gender preference among local couples. As previously mentioned, however, the risks relative to occupational groups with different and, to some extent, divergent needs in terms of sex composition of offspring may somehow combine and offset one another in the models presented in Table 2. Thus, a further model including an interaction between husband's occupation and offspring sex composition was estimated in order to highlight possible differentials by occupational category in the impact of the sex composition of surviving children on the risk of another childbirth (Table 3).

First of all, the overall effect of interaction is statistically significant at p < 0.10 only in the high-parity model (parity 5+), while for the other two models (parity 3-4 and parity 3+), the likelihood ratio test does not produce a statistically significant result. Despite the statistical weakness of the low-parity model, the comments below concern both low- and high-parity models.

As for transitions 3-4 and 4-5, the stage at which, according to Bulatao, couples should be concerned about having a balanced sex composition of

Table 2. Logistic model of having another child. Effect of gender composition
of surviving children on fertility,
Casalguidi, 1819-1859, married women aged 20-49

Variables	Parity 3-4		Parity 5+		Parity 3+	
	Frequency	OR	Frequency	OR	Frequency	OR
Age						
Ref. <35 years	61.7	1	2.9	1	39.9	1
35-39 years	21.2	**0.56**	67.1	**0.77**	25.9	**0.71**
40-49 years	17.1	**0.12**	30.0	**0.17**	34.2	**0.17**
Age at first birth						
Ref. <25 years	32.9	1	23.7	1	28.0	1
25-29 years	52.9	0.95	69.3	1.17	61.7	0.98
30+ years	14.2	1.38	7.0	1.58	10.3	1.26
Birth interval						
Ref. 2-3 years	19.9	1	22.1	1	21.1	1
<2 years	66.8	**0.19**	58.8	**0.25**	62.6	**0.23**
4+ years	13.3	**0.16**	19.1	**0.13**	16.4	**0.13**
Sex composition of surviving children						
Ref. Sons = daughters	23.6	1	18.8	1	21.0	1
Daughters > sons	16.0	0.97	28.3	0.91	22.6	0.98
Sons > daughters	15.4	1.12	36.2	1.04	26.6	1.13
Only daughters	24.8	1.05	7.9	1.16	15.7	1.07
Only sons	17.5	1.25	8.5	0.71	12.7	1.04
No surviving children	2.7	1.66	0.3	1.97	1.4	1.66
Husband's occupation						
Ref. Sharecropper	40.2	1	44.5	1	42.5	1
Non-agricultural occupations	16.9	0.90	15.5	**1.28**	16.2	1.08
Day Labourers	28.0	**0.76**	21.3	**0.89**	24.4	**0.82**
Smallholders	12.2	1.01	15.4	1.09	13.9	1.04
Unknown occupation	2.7	1.27	3.3	1.14	3.0	1.25
Women-years		2,008		2,318		4,326
Births		616		530		1,146
Log-likelihood		−1,084		−1,081		−2,175

Notes: In bold, $p < 0.05$. OR = odds ratio. Frequency = Percent relative frequency.
Source: Authors' calculations.

surviving children, sharecroppers and smallholders do not present such an
effect. Day labourers are the only occupational group where Bulatao's hypothesis
appears somehow to hold. In fact, in the presence of a balanced sex composition
of surviving offspring (at least one surviving child of each sex), they present

Table 3. Logistic model of having another child. Model with interaction household head's occupation versus sex composition of surviving children, Casalguidi, 1819-1859, married women aged 20-49

Variables	Parity 3-4	Parity 5+	Parity 3+
	OR	OR	OR
Sex composition of surviving children			
Ref. Daughters = sons	1	1	1
Daughters > sons	0.86	1.12	0.97
Sons > daughters	1.15	1.29	1.19
Only daughters	0.92	**2.15**	1.16
Only sons	1.23	0.89	1.16
No surviving children	1.35	-	1.87
Husband's occupation			
Ref. Sharecropper	1	1	1
Non-agricultural occupation (NA)	1.00	**2.56**	1.52
Day labourer (DL)	**0.55**	0.95	**0.68**
Smallholder (SM)	1.08	1.46	1.19
Interaction			
Daughters > sons * NA	1.70	0.44	0.91
Sons > daughters * NA	0.67	**0.44**	0.65
Only daughters * NA	0.74	**0.16**	**0.44**
Only sons * NA	0.67	**0.44**	**0.51**
No surviving children * NA	2.31	-	1.86
Daughters > sons * DL	1.26	0.87	1.13
Sons > daughters * DL	1.07	1.01	1.23
Only daughters * DL	1.80	0.69	1.35
Only sons * DL	1.71	1.31	1.50
No surviving children * DL	1.56	-	0.99
Daughters > sons * SM	0.73	0.73	0.81
Sons > daughters * SM	1.01	0.80	0.93
Only daughters * SM	0.82	0.42	0.71
Only sons * SM	1.08	0.59	0.83
No surviving children * SM	1.08	-	0.57
Log-likelihood	−1,075	−1,067	−2,163
LR test (*p*-value)	15.9 (0.665)	24.8 (0.073)	23.1 (0.235)

Notes: In bold, p < 0.05. OR = Odds Ratio. The model controls also for mother's age, age at first birth, and time since last birth.
"Unknown" occupation was included in calculations but not shown because only some of the interaction terms were actually computed in each model due to the small number of observations (Table 2). In the Parity 5+ model, the very few observations (7) concerning the category "no surviving children" were excluded.
The likelihood ratio test compares the models with and without interaction (see Table 2).
Source: authors' calculations.

a significantly lower risk compared to sharecroppers of having another child (–45%). The high risks associated with the absence of a given sex, although not statistically significant, seem to further support this hypothesis. One can only speculate about the reasons for this result. One possible interpretation is that among the landless group of day labourers son preference may have been less crucial than among other landed categories or sharecroppers, in which males had higher economic value. The neolocal family formation system followed by day labourers is a socio-demographic model in which less importance is attached to the difference between males and females, both destined to leave the paternal household on marriage.

The relationship between son preference and fertility is stronger in the high-parity model (5+ children). Among sharecroppers, the presence of only daughters seems to urge the couple to try for a new birth, hopefully a male child, more than doubling the risk of having another child compared to women with a balanced offspring sex composition. It was crucial for sharecroppers to have at least one son, who was needed not only for farm labour but also as future household head, and this put pressure on couples, especially near the end of their reproductive lives, to have a further child. At the same time, the presence of many sons did not yield any significant fertility decrease because a high number of male children was always positive for the working capacity of the household and provided grounds for moving to a larger farm as soon as one became available. Non-peasant couples preferred sons as well, but, in this case, it was the presence of more (or only) male children that significantly decreased the risk of having a further child, especially compared to women with an equal number of sons and daughters. For couples involved in non-agricultural occupations, a sex-balanced composition of offspring appears to be the condition most favourable to the birth of another child.

Conclusions

The influence of the sex composition of surviving children on fertility has been widely studied and debated for contemporary populations but seldom for pretransitional European populations, despite the fact that many rural and traditional communities of nineteenth-century Europe were characterized by gender hierarchy and discrimination against females. In this article, we have explored the possibility that the distinctive family and economic system of Tuscan sharecropping, that obliged this landless category to guarantee a family workforce over many generations in order to protect themselves from eviction, might lead to a preference for sons over daughters, and hence be one of the determinants of their high fertility levels.

Findings from the case study of Casalguidi provide only partial support for our research hypothesis. In fact, we found evidence that son preference did not condition the fertility pattern of the social groups living in the rural

community of Casalguidi, with the exception of sharecroppers, among whom sons had higher economic value and took priority over daughters for evident labour-related reasons and due to the constraints imposed by the sharecropping contracts. However, even in this case, the effect is limited. The sex composition of surviving children appears to promote fertility only when it is totally skewed, i.e. formed exclusively by daughters, and only at higher parities (5+). This suggests that son preference may have become a determinant of fertility for sharecroppers only when women approached the end of their reproductive life without a son to take over household headship and secure their position on the land. It was precisely this urgency that may have incited sharecroppers to have a further child in the hope of having a son. This limited effect of son preference on the fertility of sharecropping couples could result from the combination of two elements: the possibility of exchanging young children among kindred sharecropping households or of hiring seasonal workers whenever necessary, and the small size of plots in Casalguidi compared to other sharecropping communities (Manfredini and Breschi, 2013). These factors might reduce the need for a large family workforce, with the only crucial factor, in terms of fertility, being the presence of a son to take over household headship and to ensure permanence on the farm.

Thus, this research provides only preliminary evidence of the existence of son preference in pretransitional Southern European populations, and further studies will be needed determine whether our findings can be generalized.

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Matteo Manfredini, Marco Breschi, Alessio Fornasin • Son preference in a Sharecropping Society. Gender Composition of Children and Reproduction in a Pre-Transitional Italian Community

Sex preference, and its association with fertility, has been frequently, if not exclusively, studied for transitional and post-transitional populations. Many studies have concerned Asian countries, where patriarchal families and gender discrimination were common cultural traits favouring preference for sons. Conversely, little attention has been paid to pretransitional populations, where it was believed that couples' sex preferences were met because of their larger average completed family size. However, the pretransitional Italian sharecropping society shares the same cultural features as some contemporary Asian societies, such as patriarchal families, strong gender inequality, and a rigid gender division of work within the household that led to sons being valued over daughters. This article investigates the relationship between sex composition of surviving children and fertility in a sharecropping population of mid-nineteenth-century Tuscany. The analysis is based on the longitudinal reproductive life-histories of the women living in Casalguidi between 1819 and 1859.

Matteo Manfredini, Marco Breschi, Alessio Fornasin • La préférence pour les fils dans une société de métayers. Composition des fratries selon le sexe et fécondité dans une population italienne prétransitionnelle

Les préférences quant au sexe des enfants et leur lien avec la fécondité ont souvent, voire exclusivement, été étudiées dans des populations transitionnelles ou post-transitionnelles. L'essentiel des études sur le sujet concernent des pays asiatiques, où le patriarcat et la discrimination liée au sexe étaient deux caractéristiques culturelles favorisant une préférence pour les fils. À l'inverse, l'attention s'est très peu focalisée sur les populations prétransitionnelles, dont on considérait que les préférences quant au sexe des enfants étaient satisfaites parce que la taille moyenne des familles complètes y était importante. Mais la société prétransitionnelle des métayers italiens présente les mêmes caractéristiques culturelles que certaines sociétés asiatiques contemporaines : familles patriarcales, fortes inégalités entre les sexes et division stricte des tâches domestiques en fonction du sexe, conduisant à la survalorisation des fils. Cet article analyse la relation entre la répartition par sexe des enfants survivants et la fécondité dans une population de métayers toscans au milieu du XIXe siècle, à partir d'une analyse longitudinale des biographies de fécondité des femmes ayant vécu à Casalguidi entre 1819 et 1859.

Matteo Manfredini, Marco Breschi, Alessio Fornasin • La preferencia por los hijos varones en una sociedad de arrendatarios. Fecundidad y composición de las fratrias según el sexo y en una población italiana pre-transicional

Las preferencias en cuanto al sexo de los hijos y sus lazos con la fecundidad han sido frecuentemente, sino exclusivamente, estudiados en poblaciones transicionales o post-transicionales. La mayor parte de los estudios conciernen países asiáticos, dónde el patriarcado y la discriminación ligada al sexo eran dos características culturales que favorecían una preferencia por los varones. En cambio, sobre esta cuestión, las poblaciones pre-transicionales han sido descuidadas porque se pensaba que las preferencias en cuanto al sexo de los hijos estaban satisfechas dado el elevado tamaño de las familias. Ahora bien, la sociedad pre-transicional de los arrendatarios italianos presenta las mismas características culturales que ciertas sociedades asiáticas contemporáneas: familias patriarcales, fuertes desigualdades entre los sexos y división estricta de las tareas domésticas en función del sexo. Todo lo cual conduce a una sobre-valoración de los hijos. Este artículo analiza la relación entre la repartición por sexo de los hijos y la fecundidad, en una población de arrendatarios toscanos a mediados del siglo XIX, a partir de un análisis de las historias genésicas de mujeres habiendo vivido en Casalguidi entre 1819 y 1859.