Pigeon pairs and rich folks’ dreams. The (lack of) sex preferences for offspring in the Netherlands, 1850-1950

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In various publications, Theo Engelen charted the decline of fertility in the Netherlands, which he described as a shift from ‘fate’ to ‘choice’ (Engelen, 2009). Gradually, people abandoned the old notion that children were a ‘gift from God’, and that their number could not and should not be limited. After 1880, the more modern notion of family size as a matter of choice became apparent in the rapid decline of marital fertility rates. However, there was a huge social and cultural variation in both the perception that fertility could be controlled and the desire to actually do so (Engelen, 1987; Engelen & Hillebrand, 1986). Thus, the timing, speed and intensity of the transition towards smaller families depended both on religious beliefs and the economic benefits of children. This led to a large range of family sizes. For example, in the census of 1960 non-denominational white-collar workers reported 2.5 live-born children per marriage, whereas Roman Catholic farmers reported no less than 7.2 (Engelen 2009, p. 85).

Did people, in opting for a smaller family, take account of the sex composition of their family? In other words, did they stop having children earlier once they had produced a desired set of sons and daughters? In many societies, sex preferences are related to fertility. A strong preference for sons can result in high fertility, in the absence of sex-specific abortion or infanticide (Oppenheimer, 2001; Seidl, 1995). In many cultures, even in those preferring sons, parents hope to have at least one child of each sex (Anderson, Hank & Vikat, 2006). This means that a preference for a ‘mixed’ offspring set can also lead to higher fertility, when parents who only have children of one sex continue to have children.

In this chapter, I aim to study whether and how sex preferences affected the Dutch fertility decline. When parents desire a small family, they often also prefer to have a child of each sex. Old sayings refer to the wish of hav-
ing one son and one daughter as ‘the royal wish’ (*koningswens*) or the ‘rich folks’ wish’ (*rijkeluiswensch*) (Stoett, 1923-25). In England, this ideal family composition is known as the ‘pigeon pair’. But how old is this preference? Can we find evidence for the desire for a mixed set of offspring, e.g. in continued childbearing after, say, two, three or four sons or daughters? Among American couples born in the early 1900s, progression to the third child was clearly determined by the sex composition (Raley & Bianchi, 2006). In the German countryside, too, a preference for a mixed set of offspring was already visible among couples marrying between 1875 and 1900 (Sandström & Vikström, 2015). Reher et al. (2017) found similar outcomes for Dutch couples after 1900, whereas in the period between roughly 1875 and 1900 no clear preference was found.

But why would the sex of children matter at all? The literature suggests a shift in preferences accompanying socio-economic change. In societies where parents depended strongly on the economic contribution of their sons, even after their sons’ marriages as in many patrilineal societies, a strong preference for sons was found. Examples of this phenomenon are China and India. But in Europe as well, the preference for sons or daughters depended for a long time on their perceived benefits, which differed by sex. Daughters were welcomed for the social help they could give to ageing parents, and daughter preference appears to be related to the type of welfare regime (Gray & Evans, 2005). However, in recent stages of economic development, benefits of children came to be replaced by perceived (opportunity) costs, and in the ‘value’ of children psychological benefits came to play a larger role. Parents found and expressed their identity through children, and father-son and mother-daughter bonding formed an important element in psychological fulfillment (Hank & Kohler, 2000; Mills & Begall, 2010). This explains why in the shift towards small families – in itself part of the rise of individualism – sex preferences became stronger (Gray, 2004). However, even in contemporary Europe, sex preferences are not ‘universal’ or similar. A survey of seventeen countries (the Netherlands not included) disclosed that in one-third of the countries the progression to the third child was not affected by a sex preference, while in the other countries, both a preference for a mixed set as well as a girl preference (in Portugal, the Czech Republic, and Lithuania) was found (Hank & Kohler, 2000). In countries with low gender equity, the preference for boys is still strong (Mills & Begall, 2010). Thus, sex preferences, although undoubtedly embedded in traditional norms, can shift due to economic changes and the rise of welfare states, and due to the changing
value of children. The preferences also depend on parity – apparently they are particularly relevant in the progression to the third or the fourth child, as the motives regarding whether to have children at all dominate decisions surrounding lower parities (Bulatao, 1981).

Recently, Reher et al. (2017) analyzed the effect of sex composition of the family on parity progression, comparing Spain, Sweden and the Netherlands. The outcomes of their analysis are very intriguing, since they suggest that in the Netherlands, in contrast to Spain and Sweden, no preference for male offspring existed before the fertility transition. In their study, they pooled all parities 3-8, which makes it difficult to distinguish between couples who wanted to control their family composition and those who did not. Moreover, they did not compare sex preferences in offspring across social groups or religious denominations, nor did they contrast cities and countryside. This contribution aims to add these perspectives. I hypothesize that, if a preference for a mixed set of children emerged, this happened in the same social groups which were also forerunners in limiting family size: (urban) elites and Liberal Protestants.

Detecting changing or emerging sex preferences for offspring in the Dutch past, differentiated by social and religious groups, requires high-quality data. In the next section, we will discuss the data and the methods we applied for this research. Then we will take a look at parity progression rates by sex composition. Next, we will proceed to a comparison with the findings for the 19th-century German countryside, by using a similar approach focusing on the transition to the fifth child. Finally, we will try to find the forerunners of the mixed two-children family ideal. I emphasize the word ‘try’, as it will soon become apparent that sex preferences were largely absent before 1950.

**DATA AND METHODS**

If we are to trace shifts in sex preference, e.g. from a preference for sons to a preference for mixed offspring, we require data covering a long period. Ideally, this data will include different contexts (urban and rural settings), different social groups (to account for the effect of household production), different religions, the age of the mother, and the survival status of the children. A dataset that matches these criteria is the Historical Sample of the Netherlands (Mandemakers, 2006). The sample of Research Persons is drawn (0.5%) from birth certificates (1812-1922). Research Persons born
after 1862 (in some regions from 1850 onward), are tracked in their entire life courses, including family formation, using the population registers. This implies that we have good information on fertility decisions after about 1890. This data has also been used by Reher et al. (2017), but we would like to cover an earlier period as well, since in some social groups fertility decline had already begun before 1880/1890. To discover sex preferences before the onset of the fertility decline, we can also make use of the data on the family of orientation of the Research Persons. But this comes with some methodological caveats. As the sample is drawn from the birth certificates, children from large families have a greater likelihood of being selected than children from small families. Thus, although the children are representative of their generation, their parents are not. To demonstrate the effects of this ‘bias’, Figure 1 shows the distribution of completed families (i.e. the parents are observed at least until the mother reached age 45), differentiating between the family of orientation of Research Persons and their own families. The latter information is derived from a database of Research Persons marrying in the inter-war period (between 1918 and 1939) (Van Bavel, Kok & Engelen, 2008). Only fertile couples are included in the analysis. The two ‘samples’ show a very different picture. Whereas small families are a minority in the family of orientation, even when the mother was born in the 1880s, they strongly dominated the families of the Research Persons themselves. Thus, the fertility decisions of parents of Research Persons clearly cannot be taken as representative of Dutch couples in general. We do see some interesting trends, however. Due probably to declining mortality, we see a remarkable increase in the share of large families among (maternal) birth cohorts 1810-1860. After birth cohort 1850/59, the share of small families increases. In the ‘own’ families, we witness a decline in the share of small families, which is probably due to the Baby Boom.

In this chapter I use, with necessary caution, data from the parental families (building on Vermunt 2017, N = 36,974) and from the inter-war dataset (N = 3,099). Both datasets are harmonized and integrated. Apart from the surviving ‘sibset’ at each parity, I include variables on socio-economic status, religion and place of residence. Social groups are classified according to the HISCLASS codes of the occupations of the fathers (Van Leeuwen & Maas, 2011), religious denominations according to the scheme proposed by Kok (2017), and urban-rural localities according to the definitions by Kooij (1985).
Although the data, as described above, do not form the best indicators of fertility levels, this should not affect a comparison of parity progression by family composition. My interest here is in whether stopping or continuing with having children depended on having a mixed-sex group of children, or having only boys or girls. And do I find differences already after two children, or particularly at higher parities as predicted in the literature? In Figures 2, 3 and 4, I show progression rates by birth period of the second, third and fourth (surviving) child, respectively. I only include those natal families in which the Research Person had already been born.

When there is a (growing) preference for mixed offspring sets, we should see this reflected in lower parity progression rates compared to sets consisting of only boys and only girls. Also, on average, couples with a strong son preference will continue to have children if they have only girls. Figures 2, 3 and 4 do not show a consistent sex preference. The rates for the progression from the second to the third parity (Figure 2) are remarkably similar, suggesting the absence of any preference. In Figure 3, it seems as if the relatively low progression rates for families with only boys in the 1870s reverses between 1910 and 1930. Figure 4 is also difficult to interpret:

![Graph showing parity progression](image-url)
overall progression rates for ‘only boys’ seem to be higher than for ‘only girls’, which might indicate that parents would rather have at least one girl than at least one boy.

My findings corroborate the outcomes of Reher et al. (2017) who found, after 1900, elevated hazard ratios of a next child of couples having only boys. However, we can see that this mattered for the progression to the fourth and fifth parity much more than to the third. These graphs may be
influenced by changes over time, for instance in the age at childbirth, and they may hide important variation, for instance by social group or the share of people living in cities. To tackle those problems, we need a multivariate approach.

**Progression to the Fifth Child. A Comparison with Rural Germany**

Knodel and De Vos (1980) did not find evidence for sex preferences in eighteenth- and nineteenth-century Germany, which puzzled them as they had expected at least a preference for sons. Recently, Sandström & Vikström (2015) repeated their analysis, focusing on the progression from the fourth to the fifth child, a parity at which deliberate stopping was most common in the population studied by Knodel and De Vos (1980). However, Sandström and Vikström used event history analysis, which takes account not only of the event of the birth of a next child, but of its timing as well. Often, a failed attempt at stopping is visible in a long birth interval. Using this technique, they did find a clear son preference until (marriage cohort) 1875, changing into a preference for a mixed offspring after 1875. By emulating their method, and thus specifying Cox regression models in a similar way, my aim is to see whether a similar pattern can be found for the Netherlands as well. Admittedly, I have used birth cohorts of
children, whereas Sandström & Vikström make distinctions between marriage cohorts of parents.

The method implied that all intervals were calculated between the fourth (surviving) child and the fifth. If no fifth child was born, but the family was still observed, the episode was ‘censored’ after six years. If the family was observed for a shorter period (e.g. through the death of the mother), censoring occurred earlier. To make the outcomes as comparable as possible, I tried to include similar controls for socio-economic status, area (in my case rural or urban) and the mother’s age. However, I also controlled for religion. As Engelen (2009) has shown, religion was a crucial variable in fertility control, at least before 1960.

In table 1, the reference category is always a mixed offspring set. Each row represents a separate model, of which the control variables are not shown. The first rows show the outcomes (relative likelihoods) of Sandström and Vikström. In the fourteen German villages originally explored by Knodel and colleagues, couples marrying between 1825 and 1849 only exhibited a boy preference: the relative chances of a next child were 22% higher when the couple had four surviving girls compared to when they had both boys and girls. When they had four surviving boys, however, they responded in the same way as parents of a ‘mixed’ set. In the marriage cohort 1850-1874, the boy preference even increased. However, couples marrying after 1875 also showed a desire to continue with childbearing when they had four girls. Sandström and Vikström (2015) see this as a clear indication of an emerging preference for a mixed set of children.

The Historical Sample of the Netherlands makes it possible to run similar models, but also to zoom in on regions and groups of interest. Thus, I run separate models for town, countryside, farmers, middle class, skilled workers, unskilled workers, Liberal Protestants, and Roman Catholics (Table 1). It would have been interesting to look even more closely at expected ‘forerunners’ such as the elite or Jews, but their numbers are too small. My exercise does not yield clear results. Neither people living in rural areas, nor farmers, show a statistically significant larger likelihood and speed to progress to a next child when they had four sons or four daughters. It is unlikely that the difference with Sandstöm & Vikström’s findings is caused by a much earlier onset of the fertility decline in Germany than in the Netherlands. At any rate, the total fertility rates of both countries did not diverge strongly before the First World War (source: www.gapminder.org; see Ajús & Lindgren, 2008). Occasionally, I do find significant results, but they are not very consistent. In the period 1925-1949,
the middle class appears to have a preference for a mixed set of children, and especially for continuing with childbearing when they had only girls (2.6 times more likely than the reference category of a mixed set). The pattern seems to have started in 1900-1924 when they also exhibited a higher likelihood of having more children in the case of only girls (borderline significant). Another finding relates to the ‘Liberal Protestants’ (Dutch Reformed, Lutherans, Mennonites and Remonstrants, see Kok, 2017) in the period 1875-1899. When they had only daughters, they tended to stop more often. Borderline significant findings are the greater likelihood and speed of proceeding to the next child for couples with only boys in cities between 1850 and 1874 (+35%), skilled workers in the same period (+40%), and middle-class couples in 1875-1899 (+35%). Indeed, it is interesting to see that in many cases the relative chances of a next child for ‘only boys’ are higher than for ‘only girls’. Apparently, parents wanted to have at least one girl more than they did at least one boy. Again, this corroborates the findings of Reher et al. (2017).

Table 1. Relative likelihood (Cox regression) of progression to a fifth child.

<table>
<thead>
<tr>
<th>Marriage cohorts of parents</th>
<th>1825-49</th>
<th>1850-74</th>
<th>1875-99</th>
<th>1900-1924</th>
<th>1925-1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 German villages</td>
<td>Only boys</td>
<td>Only girls</td>
<td>Only boys</td>
<td>Only girls</td>
<td>Only boys</td>
</tr>
<tr>
<td>Dutch countryside</td>
<td>0.98</td>
<td>1.04</td>
<td>1.09</td>
<td>0.93</td>
<td>0.97</td>
</tr>
<tr>
<td>Dutch cities</td>
<td>1.35†</td>
<td>1.01</td>
<td>1.01</td>
<td>0.87</td>
<td>0.91</td>
</tr>
<tr>
<td>Farmers</td>
<td>1.04</td>
<td>1.08</td>
<td>1.04</td>
<td>0.81</td>
<td>1.06</td>
</tr>
<tr>
<td>Middle class</td>
<td>0.94</td>
<td>0.90</td>
<td>1.35†</td>
<td>0.86</td>
<td>1.00</td>
</tr>
<tr>
<td>Skilled workers</td>
<td>1.40†</td>
<td>1.14</td>
<td>1.05</td>
<td>0.97</td>
<td>0.85</td>
</tr>
<tr>
<td>Unskilled workers</td>
<td>1.02</td>
<td>0.98</td>
<td>1.02</td>
<td>0.89</td>
<td>0.94</td>
</tr>
<tr>
<td>Liberal Protestants</td>
<td>1.10</td>
<td>0.93</td>
<td>0.93</td>
<td>0.79**</td>
<td>0.93</td>
</tr>
<tr>
<td>Roman Catholics</td>
<td>1.01</td>
<td>0.95</td>
<td>1.08</td>
<td>0.92</td>
<td>0.87</td>
</tr>
</tbody>
</table>

†p<0.05; *p<0.01. Based on Sandström & Vikström (2015, pp. 65 and 67); hsn release 2010. As we do not know in most cases when the parents married, the outcomes are ordered by the birth date of the (fourth) child. Controls include age of the mother, urban/rural residence, religious denomination and socio-economic status. Only those parental families are included in which the Research Person had already been born.
So far, focusing on higher parities has not brought much substantive evidence of sex preferences in the Netherlands before 1950. But perhaps we should focus on lower parities. Perhaps couples deciding to have a small family – a trend which started in the first half of the twentieth century – were actually more likely to consider the sex of their children than couples who already had a sizeable family. In the next experiment, I select couples having a second (surviving) child after 1900. Moreover, I only select couples in which the mother was younger than forty. In principle, these couples could still go on to have a third child, if they so wished.

In table 2, the outcomes of the event history analysis are presented. The first model only includes the composition of the family, and we can see that it does not have any effect on progression to the third child. The contrast with the control variables in model 2 is striking. Compared with rural couples, couples in cities are much more likely to delay or forego the arrival of a third child (-22%). Also, the socio-economic differentials are as expected. All social groups have a lower likelihood of a third child than the farmers. The smallest difference in likelihood exists with the unskilled workers, who probably still counted on the future (wage) incomes of their children. Religion clearly has an autonomous influence as well (see also Engelen 2009, p. 76-84). Compared to the Roman Catholics, all groups have lower likelihood of a third child, especially people with no religion, Liberal Protestants, and Jews.

We would expect forerunners of the two-child family consisting of a boy and a girl to live in cities, to be from the higher or middle class, and to have no or lenient religious beliefs concerning the possibility of choosing one’s own family size, let alone its composition. To find those ‘pioneers of the pigeon pair’, we add a number of interactions to the model. In Model 3 we interact the sex composition of the two-child family with living in a city. We see that the interaction points in the direction of a preference for a mixed family in cities, but that only the effect of having daughters is significant. In other words, couples living in cities having two daughters were more likely to go on having children than urban couples with a mixed offspring set. Model 4 presents the same exercise with middle class couples, but the outcomes are not significant, and neither is the exercise of calculating an interaction with elite status (not shown here). Religion, as so often, turns out to be a better predictor of demographic behavior. An interaction of family composition with Liberal Protestant denomination
shows a clear preference for a mixed family. A similar, but statistically weaker, result was found for non-denominationals (only boys* no religion=1.13, p=0.619; only girls* no religion=1.76, p=0.029).

Our exercise has taught us that, overall, sex preferences did not play a role in the decision to have a third child. To some extent, the lack of a ‘general’ effect may have been caused by counteracting (or cross-over) effects, for instance when the rural population had different preferences from the urban one, or the Protestant population from the Catholic one. To account for such cross-over effects, we added a number of interactions to the model, which did indeed suggest that effects differed by subgroup. The clearest indication of a preference for having (at least) a boy and a girl was found among Liberal Protestants. Research using the same definition of this religious group, and contrasting it in a similar way (multivariate analyses using the Historical Sample of the Netherlands) to Roman Catholics
has shown a (significant) higher tendency of childlessness, of having only one child, of more spacing and earlier stopping with childbearing (Kok 2017, p. 73). To these indicators of birth control we can now add that of stopping after the second child when the two children were of different sexes.

**CONCLUSION**

This brief exercise in historical demography has shown that sex preferences for offspring were virtually non-existent in the Netherlands before 1950. In so far as we did find evidence, it was (statistically) weak and inconclusive. This should not come as a surprise. We have seen that, even in contemporary Europe, in one-third of the countries surveyed, sex preferences are absent. Furthermore, the literature suggests that such preferences are more likely to be found in low-fertility regimes, whereas the period we studied was still characterized by relatively high fertility. However, Reher et al. (2017) did find indications of a Dutch preference (after 1900) for a mixed offspring set, particularly when there was still no girl. This different result might have been caused by their clustering of all parities, and/or by their inclusion of the death of the last child as a time-dependent variable. It might be advisable to emulate their model as well. However, the difference with the clear findings for the nineteenth-century German villages is also striking. The Historical Sample includes a wide variety of people (differing by type of locality, by occupation, by religion) and perhaps a greater similarity in social conditions and cultural norms accounts for the unequivocal German response to a non-mixed offspring set. However, the villages are spread across Germany, and include different religions and inheritance rules (Sandström & Vikström 2015, p. 61). It is more likely that my sample consists of many different groups, perhaps to be labelled *communicating communities* (Szreter, 1996), with different norms regarding whether to control family size at all, on what would be the ideal size, and on what would be an ideal composition. Such norms would be communicated within local (or national, depending on the types of communication mechanism) communities. Adding all these communities together may lead to cross-over effects, resulting in limited overall outcomes. At the very least, my analysis of the arrival of the third child has shown that Liberal Protestants in contrast to Roman Catholics were more likely to stop having more children when they had a boy and a girl.
In his work on the fertility decline, Theo Engelen has argued for models charting motivation and for acceptance of the idea that couples could control their own family size. He argued that understanding how, when and why reproductive mentality changed was crucial to unraveling the different regional courses of the fertility transition (e.g. Engelen & Hillebrand, 1990). I argue that mentality change may not only be visible in the desire to control the number of children, but also in their sexes. However, such a desire does not seem to be part of the Dutch fertility transition before 1950.

REFERENCES


