A parallel and complex kinship universe? Replicating and extending Kolk et al. (2023) using the family layer of the Dutch person network.

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Introduction

While acknowledging complexity and diversity in contemporary families (Seltzer 2019), family demographers' dominant perspective on "the family" still tends to be biased towards nuclear family relations, largely neglecting other kin (Furstenberg 2020). Moreover, most studies' investigating families' role in providing social support are limited to currently activated family relations, which constitute only a part of the individual's "kinship reservoir", that is, the demographic family reserve of ties which can be activated, reactivated or deactivated over the life course (Cullati et al. 2018). Thus, to gain a more comprehensive picture of the family network's potential to impact its members' lives (e.g. through the exchange of intergenerational support or the reproduction of social stratification), more quantitative knowledge about extended kinship structures seems highly desirable.

Research in the past decade or so has begun to fill in this gap, mostly building on microsimulations and mathematical demographic models (see Alburez-Gutierrez et al. 2022). A recent assessment of "The Swedish Kinship Universe" by Kolk et al. (2023) advanced this previous research in several important ways. Using observed empirical data for the entire Swedish population in 2017, the authors provide, for the first time, a detailed numeration of biological kinship (population averages as well as measures of spread and dispersion), including kin traced through full and half-siblings, children by partner order, and separate kin counts for the maternal and paternal sides. The analysis revealed substantial heterogeneity in kinship size within birth cohorts, a dominance of horizontal kin in adult kin networks, a non-negligible (and growing) relevance of 'complex' kin relations, as well as some differences between matrilineal and patrilineal kin.

Even though Kolk et al. (2023: 22) argue that "many of our results can probably be generalized to demographically similar contexts", it still seems worthwhile to replicate their Swedish study using one of the rare datasets suitable to do so. In this study we compare the Swedish kinship networks as presented by Kolk et al. (2023) to kinship networks in The Netherlands. Despite overall similar demographic developments in the Netherlands and Sweden across the twentieth century, there are also noteworthy differences, such as Dutch women's higher fertility in pre-WWII cohorts and their consistently lower cohort fertility from 1955 onwards (see Human Fertility Database 2023) as well as the war-related excess mortality during the Dutch famine of 1944-45 (Ekamper et al. 2017).

Beyond providing another opportunity to empirically validate kinship calculated from microsimulations and analytical approaches, our analysis therefore allows us to assess, first, the extent to which the Swedish findings by Kolk et al. (2023) are indeed generalizable to other demographically advanced populations and, second, to which extent moderate but sustained differences in cohort fertility over time or exposure to short-term mortality shocks might affect the frequencies of different kin types across contemporary societies.

Lastly, due to increasing divorce rates, subsequent re-partnering, and the creation of stepfamilies, families have also become more complex (Raley & Sweeney, 2020), and the concept of kinship may have changed accordingly (Furstenberg, 2020). Therefore, this study will not only map kinship ties to grandchildren, children, nieces, nephews, siblings, cousins, parents, aunts, uncles, and grandparents – as was done by Kolk et al. (2023) – but will also assess the presence of step-grandchildren, step-children, step-siblings, step-parents, and step-grandparents.

Data & methods

Statistics Netherlands recently released the Dutch person network (van der Laan, 2022; van der Laan et al., 2022). The person network consists of five layers: family members, housemates, neighbors, classmates, and colleagues. This study uses the family layer to determine the kinship ties of all 17 million Dutch inhabitants. The layers were derived on October 1st, 2018. This snapshot of the full population implies that information from deceased people cannot be derived. The data are accessed via POPNET, which is an infrastructure to analyze these network data (https://www.popnet.io/; see Bokány et al. 2023). Similar to Kolk et al. (2023), the analytical sample refers to egos. Kolk and colleagues (2023) derived figures representing the average number of grandchildren, children, nieces, nephews, siblings, cousins, parents, aunts, uncles, and grandparents, as well as the proportional distribution of these kin. Since reproducing these graphs for the Netherlands would lead to an extensive and, in some cases, repeated discussion, the figures presented below delve into the most notable differences between the Netherlands and Sweden.

Preliminary Results

Figure 1 displays the proportional distribution of the number of living children among individuals who were alive and registered in the Netherlands on October 1st, 2018. The shaded area on the right side of the dashed line indicates cohorts whose fertile years are not yet completed (i.e., younger than 40 years old). The figure shows that most people in the Netherlands have 2 children. When comparing these results to those of Kolk et al. (2023), it is noticeable that the proportion of individuals with 4 or more children among those aged 78 or older is larger in the Netherlands (a maximum proportion of 20% in the Netherland and 10% in Sweden), which can be attributed to a larger baby boom in the Netherlands.

Figure 2 displays the average number of living siblings. The shaded area on the right side of the dashed line indicates cohorts who may still acquire siblings since their parents have not finished their fertile years. The figure shows a much greater variance compared to Sweden. While Swedes have an average of two siblings, Dutch birth cohorts from the 1950s-1960s have an average of 2.5 siblings, whereas this number was close to 1.5 in the 1990 cohorts. These results once again emphasize the larger baby boom in the Netherlands.
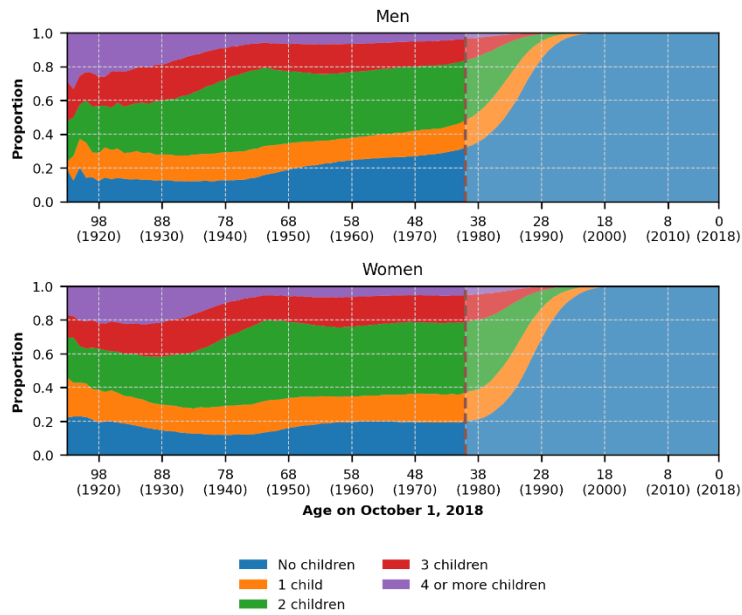
Figure 1. Proportional distribution of the number of children in the Netherlands (2018)
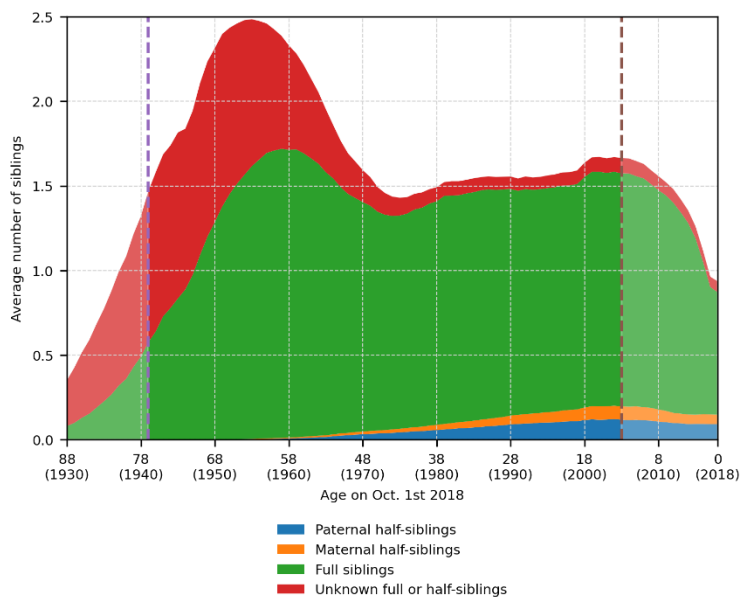
Figure 2. Average number of siblings in the Netherlands (2018)

Figure 2 also reveals that, on average, Dutch people have 0.2 half-siblings, compared to 0.75 half-siblings in Sweden. The highest crude divorce rate in Sweden was 2.8 in 2013, compared to 2.1 in The Netherlands in 2012 (Eurostat, 2021), which explains the difference in the number of half-siblings between the Netherlands and Sweden. The number of paternal half-siblings is slightly higher in the Netherlands, while this difference was not observed in Sweden.

Conclusion

In summary, although the Netherlands and Sweden are two relatively comparable countries, individuals' kinship networks exhibit slight variations. During the 1950s and 1960s, the Netherlands witnessed a higher birth rate than Sweden. This demographic difference carries implications for future generations, resulting in a possibly increased number of aunts, uncles,

and consequently, more cousins among Dutch families. In Sweden, there is a currently higher prevalence of half-siblings. In the next phase, we will not only illustrate how these differences extend across subsequent generations, but also provide a detailed profile of complex kinship structures, encompassing step-children, step-siblings, step-parents, and step-grandparents among individuals in the Netherlands.

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