

A FUTURE WITH CHILDREN

Myths, Core Concepts and Recommendations
on Fertility and the Development of Society

Berlin-Brandenburg Academy of Sciences and Humanities
German National Academy of Sciences Leopoldina



Leopoldina
Nationale Akademie
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FOREWORD

The current debates on demographic transformation have been characterised on the one hand by declining birth rates and on the other by increasing life expectancy. Such debates usually focus on the consequences for society, which are frequently described in dark terms. In this booklet, by contrast, you will find analyses and suggestions on how to improve the situation of children and parents to make it easier to realise the desire to have children. In the spring of 2009, both academies set up an interdisciplinary research group sponsored by the Jacobs Foundation that pursued a different perspective. This research group, entitled 'A Future with Children: Fertility and the Development of Society', concentrated on the causes of the low birth rates in Germany, Austria, and Switzerland. An important universal element of the group's research is its focus on the life course. A Future with Children, seen from this perspective, means above all to reconsider the way that the life course is arranged, so that everyone – both women and men – can achieve lasting and equal social participation in the various spheres of life.

The Research Group has determined that two concepts are paramount when it comes to A Future with Children: child and parental well-being. How these concepts are realised in a society can be shown by analysing various individual aspects, including the material situation of parents and children, their healthy development, their participation in education, and their subjective satisfaction. A (family) policy that does justice to developments in society and is also geared towards a future with children should have as its primary goal the well-being of (potential) parents and children. Parents should be put in a position where they can promote, support, and supervise the development of their children to the very best of their ability. An appropriate family policy above all gives parents family time, financial security, and opportunities to participate in the life of a society, and it guarantees these for children as well. We therefore believe that raising the birth rate, promoting specific family models, and regulating developments in immigration or the labour market are not the primary goals of a family policy that is geared towards a future with children.

Our concentration on the three countries of Germany, Austria, and Switzerland has allowed the Research Group the opportunity to compare and analyse data at the regional level of societies. This ensures the comparability of the fundamental empirical data, as well as the concepts that we draw from them. The Research Group is convinced that this a sensible and forward-looking way to advise on policy,

since the effect of measures affecting children and families is highly dependent on context.

We have analysed migration, in particular internal migration, but this topic does not feature prominently in our discussion of how to improve the living conditions of the children in our society. This is because the different opportunities that children have for their futures depend much more on their social background and the regional context in which they live than on their ethnic origins.

From the beginning, the complexity of the topics involved has dictated that we put together an interdisciplinary research group. This access across disciplines represents a new approach and is reflected in the multifaceted nature of our analyses, results, and recommendations.

The detailed results from the Research Group are published in the book *Zukunft mit Kindern – Fertilität und gesellschaftliche Entwicklung in Deutschland, Österreich und der Schweiz* (A Future with Children: Fertility and the Development of Society in Germany, Austria, and Switzerland; Campus, 2012). The book has been edited by leading experts from the Berlin-Brandenburg Academy of Sciences and Humanities and the German National Academy of Sciences Leopoldina. The book presents the current state of scientific knowledge in a way that has never been achieved before, combining demography, history, medicine, economics, politics, psychology, and sociology.

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MYTHS AND LEGENDS

When it comes to the subject of fertility and birth rates, there are widely circulated opinions within the general population, and sometimes even among experts, that are not scientifically sound yet are still treated as fact. The Research Group has taken up these myths and legends and discussed the factual evidence (or lack thereof). The following demonstrates how such beliefs should be assessed in light of current scientific knowledge.

1. "CHILDLESSNESS IS HIGHER THAN EVER BEFORE."

What we know today: lifelong childlessness among men and women is at a high level in the three countries of our comparative study (Austria, Germany, and Switzerland). About 20 per cent of women born in and around 1965 have remained childless. There are great differences between eastern and western Germany. Whereas childlessness in eastern Germany is at 10 per cent, the share in western Germany is 22 per cent, which is one of the highest in Europe. Historically, however, high childlessness is not a new phenomenon. Many people remained unmarried and childless for life in pre-industrial Europe, and even married couples could end up without offspring because of the high rate of child mortality. In the same way, childlessness in the three analysed countries was at over 25 per cent among the women born at the beginning of the twentieth century. The reproductive years of these women coincided with the economic crisis of the 1930s.

2. "HIGHLY EDUCATED WOMEN RARELY HAVE CHILDREN."

What we know today: childlessness is markedly higher among female academics than among other women. But a lack of data has meant that the extent of childlessness in the past was overestimated. For example, microcensus results from 2008 for Germany show that 28 per cent of female academics born in 1965 have remained childless.

3. "PEOPLE WITH LESS EDUCATION HAVE MORE CHILDREN EVERYWHERE."

What we know today: there is no inevitable link between education and number of children. In countries such as Germany, Austria, and Switzerland, which exhibit difficult conditions for combining parenthood with an employment career, women who have attained a higher level of education remain frequently childless. In countries with good conditions, such as Sweden, Denmark, and Finland, there is hardly any difference in the share of childlessness between educational categories. In Germany today it is actually the men with low incomes and education levels who frequently remain childless – also because they are seldom married or in steady partnerships.

4. "LOW BIRTH RATES ARE A RESULT OF WOMEN JOINING THE WORKFORCE."

What we know today: in pre-modern European societies, married women generally pursued employment inside and outside the home without curtailing births. After 1965, the decline in birth rates was indeed more pronounced in countries with high female employment rates. Today, however, among the developed countries it is those with high fertility such as Sweden, France, and the United States that stand out for their high (and not low) levels of female employment.

5. "IMMIGRANT WOMEN HAVE MARKEDLY HIGHER FERTILITY THAN NATIVE-BORN WOMEN."

What we know today: the variation in fertility among immigrant women is large, with some groups of immigrants exhibiting a higher level (for example women born in Turkey, who retain fertility above replacement level) and others (for example German-born women in Austria) exhibiting a lower or similar level to native-born women. On the whole, fertility among immigrant women is lower than generally assumed and, for the three countries in our comparison, it is below the replacement level of 2.1 children per woman. In Austria, where reliable statistics on fertility of migrant women exist, the total fertility rate (TFR) for immigrant women was 1.9 in 2010 and showed a gradual decline over time. Across the generations, the differences between immigrant women and native-born women fade, so that second-generation immigrant women exhibit similar fertility to native-born women.

6. “SINCE WOMEN’S LIFE EXPECTANCY HAS RISEN SUBSTANTIALLY IN RECENT DECADES, WOMEN HAVE LONGER TO BEAR CHILDREN.”

What we know today: the date of onset of menopause has not shifted since the mid-twentieth century and continues to occur at an average of 51 years of age. Over the same time the date of menarche, a woman’s first monthly period, has been shifted up to two years forward, along with the earlier onset of puberty, and now occurs on average between age 12 and 13.

7. “WOMEN CAN BECOME PREGNANT EASILY UNTIL THEIR EARLY TO MID-FORTIES.”

What we know today: a woman’s fertility declines gradually from about age 30 and markedly from about age 35. As a woman ages, what was once intentional childlessness can become unintentional. A man’s reproductive capability also declines markedly beginning at about age 40.

8. “WOMEN CAN POSTPONE CHILDBEARING UNTIL THEIR MID-THIRTIES OR EARLY FORTIES, SINCE THEY CAN EASILY HAVE CHILDREN WITH THE HELP OF REPRODUCTIVE TECHNOLOGY IF THEY FAIL TO DO IT THE NATURAL WAY.”

What we know today: the achievement of pregnancy and the birth of a living child depends crucially on the age of the woman and on the number and quality (maturation and fertilizing ability) of her egg cells (oocytes). Thus women over 40 have less than half the chance of women under about 34 of becoming pregnant and giving birth to a living child through IVF (with similar odds for conceiving naturally). Beginning at about age 40, however, also sperm quality declines as the father ages, albeit to a lesser extent than egg quality.

9. “MEN’S SEMEN QUALITY HAS WORSENERD IN RECENT DECADES.”

What we know today: recent semen quality remains unchanged. In the past, the methods and standards for measuring sperm quality were too varied and made it impossible to compare studies. Not until the World Health Organisation (WHO)

drew up standard values could consistent criteria be created. Long-term studies are required in order to clearly answer the question of changes in semen quality.

10. "PEOPLE WANT TO HAVE MANY MORE CHILDREN THAN THEY ACTUALLY DO."

What we know today: in Europe, the desired number of children is around two children per woman, whereas the TFR is on average 1.5 children per woman. This difference, described as the 'fertility gap' in the literature, often serves as an argument for new family policy measures. But the difference between the number of children planned and the number actually born has been overestimated.

If we compare planned and actual family size correctly within the same birth cohort, this difference is reduced by about a half. In the same way, when people are asked about their ideal number of children, they will often give social norms and values (which concentrate on a value of two children per woman) rather than the number of children they themselves desire to have.

11. "FAMILY POLICY HAS NO INFLUENCE ON THE INDIVIDUAL DECISION TO HAVE CHILDREN."

What we know today: the decision to have children, which is usually taken within a relationship, depends on many factors. Family policy is one of these, but economic, social, historical/cultural, medical/biological, and psychological factors also play a role. Family policy at the national and local level can therefore also have an effect on desires to have children, how these desires are realised, and how births are timed. Positive effects, as far as they can empirically be established, are often limited to a particular time period and dependent on specific underlying economic, social, and cultural conditions. It should also be taken into account that family policy measures do not have the same effects on all population groups. In general, particular family policy measures cannot be used to achieve any immediate, guaranteed, targeted increase in birth rates. A lasting effect requires the interaction of various dimensions of family policy, namely 'monetary policy', 'infrastructure policy', and 'time policy'. Moreover, effects often only begin to manifest after a delay of several years, since attitudes and norms take time to change and information may spread slowly. Evaluation studies therefore should focus on the various dimensions of family policy and concentrate on the effects in the long run.

We would caution against monocausal explanations that credit individual family policy measures with direct effects on increasing births.

12. "CHILD-HEAVY SOCIETIES ARE CHILD-FRIENDLY SOCIETIES."

What we know today: historically, the cultural appreciation of children, recognition of children's rights, and comprehensive protection of children has been connected to a decline in births and the transition to family planning. In Austria, Switzerland, and Germany, and to an even greater extent in southern European countries, we see that a low number of children can go hand in hand with high appreciation of the family and high standards for parental responsibility.

13. "WOMEN IN AUSTRIA, GERMANY, AND SWITZERLAND HAVE AN AVERAGE OF 1.4 CHILDREN."

What we know today: a period TFR of 1.4 refers to the hypothetical average number of children that a woman would have over the course of her lifetime if her childbearing behaviour corresponded to the age-specific birth rates of a given calendar year. By contrast, the cohort fertility or completed fertility rate (CFR) indicates the average number of children that a given birth cohort of women actually achieves. This is estimated at 1.6 per woman among the women born in the mid-1970s.

14. "THE FERTILITY RATES IN EUROPE AND THEREFORE ALSO IN GERMANY, AUSTRIA, AND SWITZERLAND ARE CONTINUING TO DECLINE."

What we know today: the decline in the birth rates that we had observed for decades in almost all European countries came to a halt, followed by a modest increase. This development can be explained by the fact that birth rates have been negatively affected by the long-term increase in the childbearing age (tempo effect). Because this postponement of childbearing has slowed and its negative influence on birth rates has diminished the annual birth rates have risen. This trend also holds for Austria, Switzerland, and eastern Germany. It cannot yet be confirmed for western Germany, although we can assume that it will soon become apparent there as well. The long-term decline in cohort fertility also seems to be coming to an end.

CORE CONCEPTS

The fundamental concepts that have resulted from the group's research are briefly summarised below in plain language. These core concepts also form the basis for the Research Group's recommendations.

OVERVIEW

1. Fertility trends in a historical context
2. From population policy to the safeguarding of individual rights
3. Measuring fertility - Divergence between period fertility and cohort fertility
4. Developments in fertility
5. Regional differences in fertility
6. Effects of immigration on fertility
7. Transformations in family size
8. The rise in births out of wedlock
9. Factors influencing fertility
10. Transformations in sexual behaviour
11. Postponement and recuperation
12. Reasons for late parenthood
13. The desire to have children and the number of children realised
14. Family and fertility-related models and norms
15. Intended and unintended childlessness
16. Decreasing fertility and increasing medical risks with rising age in men and women
17. Development of fecundity
18. Possible constraints on fecundity
19. Infertility
20. Pre-implantation genetic diagnosis
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23. Reproductive medicine
24. Restricting ART to couples with unintended childlessness
25. Knowledge of sexuality and fertility in children and adolescents
26. The variety of institutions and actors with relevance for family policy
27. Child and parental well-being as a primary goal of family policy
28. Dimensions of child and parental well-being
29. The family policy triad: Time, infrastructure, and money
30. Models of family time in Germany, Austria, and Switzerland
31. Regional and cultural diversity
32. Labour force participation of women and mothers
33. Men's participation in family work
34. The effect of family policy on fertility
35. The effect of family policy on child and parental well-being
36. Fertility assumptions and population forecasts
37. Future developments in fertility
38. The state of demographic data

1. FERTILITY TRENDS IN A HISTORICAL CONTEXT

History does not offer us an instruction manual, but it can sharpen our understanding of demographic trends and the complexity of their causes. A knowledge of history also gives insights into recurring basic patterns in public debates about population and the population policies they are used to support.

We can learn from history to be attentive to demographic change without resorting to panic. Societies with an average of more than two or three surviving children per woman were the exception in the Europe and United States of the late nineteenth and twentieth centuries. The preceding era saw high birth rates compete with high infant mortality. In the twentieth century we find cyclical changes in the desire to have children and in completed fertility, as well as considerable regional

variance. The development in this century was shaped not only by a decline in births, but also by a medium-term increase in births during the baby boom of the post-war era. The future development of fertility is almost impossible to predict over the long term and is susceptible to only limited policy influence.

In the past, population discourse was usually a proxy for something else: economic, social, and political matters of wildly varying types were stylised as ‘population questions’, with their solutions posited as more or fewer births. Such fixation on demography and on birth rates in particular as supposedly decisive factors in social development is wrong. Indeed, the important thing is to understand the complex interrelations between economic, social, cultural, and demographic developments.

2. FROM POPULATION POLICY TO THE SAFEGUARDING OF INDIVIDUAL RIGHTS

Historical experience cautions us against ‘pronatalist’ population policy in the sense of one that attempts to use force or moral pressure to subordinate the needs of (potential) parents and their children to the public interest as defined by the state. In the history of the twentieth century, policies of this type were always selective, encouraging births among ‘desired’ population groups and/or discouraging births among ‘undesired’ population groups. Neither is compatible with the tenets of modern, democratic societies and their principle of free and equal participation.

State population policies of the past were usually conducted in the interest of power politics or ideology. The murders and human-rights violations under Nazi population policy were the barbaric culmination of developments reaching far back into history. The recognition of ‘reproductive rights’ in liberal democratic societies – an individual’s fundamental right to self-determined reproduction – was slow to take hold. Modern family policy recognises the autonomy of the individual and is limited to facilitating the realisation of the existing desire to have children.

3. MEASURING FERTILITY – DIVERGENCE BETWEEN PERIOD FERTILITY AND COHORT FERTILITY

Demography uses various measures to record development in the birth rate. These cover either a fixed period, usually one calendar year (period fertility), or one birth cohort (cohort fertility).

The total fertility rate, or TFR, is the most widely used measure of period fertility. The TFR is frequently interpreted as the average number of children per woman and is commonplace in political and public debate, as well as in official statistics. Measures of period fertility are influenced by the timing of births. The period fertility rate will drop when women postpone having children until a later date. By contrast, the rate will temporarily increase when women have children earlier in the lifespan. Observed over the entire life course, however, both groups of women can still end up with the same average number of children.

In order to establish how many children women from a given birth cohort will have over the course of their lives, demographers use a measure known as cohort fertility or the completed fertility rate (CFR). But this figure, which is not influenced by the timing of births, cannot be calculated until a cohort of women has reached the end of the reproductive phase.

In many parts of Europe, the rise in childbearing age and the associated changes in age-specific fertility rates have led to a divergence in cohort fertility and period fertility in the last four decades. This circumstance has occasioned demographic research to improve the methods of calculating period fertility. Consideration for the change in average childbearing age is now taken into account in the calculation of period fertility.

4. DEVELOPMENTS IN FERTILITY

Germany, Austria, and Switzerland exhibit low birth rates as compared to northern and western Europe. For more than three decades, the period fertility rates in the three countries have stagnated at far below replacement level (a TFR of 2.1). The TFR reached a peak of 2.5 to 2.8 during the baby boom of the mid-1960s. A development in the opposite direction set in not long afterward in all three countries. A decline in births and a rise in childbearing age caused the TFR to drop to a value of 1.4 to 1.6 within 10–15 years. The period-specific birth rates have remained at this low level since the mid-1980s.

East Germany occupies a special position. There was a slight rise in the period fertility rates here in the late 1970s. In the early 1990s, after German reunification, eastern Germany experienced a precipitous drop in the annual birth rate; a convergence of the fertility rates in eastern and western Germany has since taken place. In 2009, the TFR was 1.4 in Germany and Austria and 1.5 in Switzerland.

If we compare the evolution in period fertility and cohort fertility, we can see that women born in Austria in 1900 had an average of 'only' 1.8 children over the course of their lives. Women born in Switzerland in 1915 had a CFR of 2.2. The baby boom of the 1960s in Germany and Austria can be attributed in the main to a change in childbearing behaviour among women born in the early 1930s, whose final number of children was an average of 2.2 (Germany) to 2.5 (Austria). After this era, cohort fertility consistently declined in the countries we studied. The 1968 birth cohort exhibits a CFR of 1.5 children per woman in western Germany and 1.6 in eastern Germany, Austria, and Switzerland.

5. REGIONAL DIFFERENCES IN FERTILITY

The differences in fertility among the European countries have decreased in recent decades. If we look at the development of regional differences within the individual countries, the assimilation happens more quickly than if we observe the countries in comparison. There are marked regional differences in the fertility levels, however. Comparisons between German/Austrian federal states or Swiss cantons do not adequately reflect these differences in generative behaviour. Smaller-scale observations, above all of the differences between rural and urban regions and between central cities and their outlying areas, reveal considerable regional differences in the countries studied. Rural regions generally exhibit higher birth rates than urban areas. The different composition of the social structure of the population in various regions and the different characteristics of the residential environment contribute to these variations. Even today, however, the regional cultural peculiarities that have developed over generations play a role.

6. EFFECTS OF IMMIGRATION ON FERTILITY

Although foreign-born women exhibit higher birth rates on average than native-born women, the effect these have on the TFR of a given country is less than generally assumed. This is because immigrant women are an extremely heterogeneous group and include both high-fertility women (from Turkey, for example) and very low-fertility women (German-born women in Austria, for example). Immigrant women in the three comparison countries therefore have a fertility that is near or below replacement level. Precise data for the countries studied is only available for Austria, where in 2010 the TFR among foreign-born women was 1.9 compared to

a TFR of 1.3 among women born in Austria. This difference fades among women of the second generation of immigrants, i.e., women who were born in Austria to immigrant families. The absolute contribution of foreign-born women to period fertility rates ranges from 0.05 to 0.12 children per woman in most European countries. In Austria the effect of immigrant women's fertility on the TFR is high compared to in other countries, ranging from 0.11 to 0.13 between 2002 and 2010.

Differentiating by country of birth is central to the analysis of the childbearing behaviour of immigrant women. It is not advisable to use the commonly applied criterion of differentiating only by the nationality of the mother, since factors such as the attainment of citizenship exert a substantial influence.

7. TRANSFORMATIONS IN FAMILY SIZE

The percentage of families with more than two children has been continuously decreasing among cohorts born after 1935. In Germany, Austria, and Switzerland, families with two children continue to be the most common. Approximately 40 per cent of women from the 1965 birth cohort have two children.

Certain differences between eastern and western Germany can be seen among the cohorts born since 1965. One-child families have gained more significance in eastern Germany. On the one hand, the percentage of women with three or more children in eastern Germany is markedly lower than in western Germany. On the other hand, childlessness in the eastern part of Germany continues to be less widespread than in the western part.

8. THE RISE IN BIRTHS OUT OF WEDLOCK

Beginning in the 1970s, marriage and birth of a first child have become increasingly decoupled. The rate of births out of wedlock has risen sharply and continuously in all European countries, often in parallel with a rise in unmarried cohabitation. We would stress that births out of wedlock should not be equated to single parenthood. In many cases, parents will marry after the birth of a first or second child.

The percentage of children born out of wedlock varies considerably among the countries, however, and there are also strongly pronounced regional differences

within the countries. In Germany there is a persistent East-West divide in the share of births out of wedlock. In 2009, 61 per cent of children in eastern Germany were born to unwed mothers, but most of these mothers were in relationships. Eastern Germany is a European region with one of the highest percentages of children born out of wedlock. In western Germany, the percentage of children born out of wedlock has risen only gradually, and is currently at 26 per cent. A similar development can be seen in Switzerland, where the percentage in 2009 was still a low 18 per cent. By contrast, the percentage of births out of wedlock in Austria has always been comparatively high and has since reached almost 40 per cent. Despite very different starting levels, the trend continues to increase in all three countries.

9. FACTORS INFLUENCING FERTILITY

Fertility is influenced by a multitude of factors. Many theories of fertility assume a fundamental human quest for children. But the desire to have children and its fulfilment is an individual thing for biological, medical, psychological, cultural, social, and economic reasons, and varies by country and historical era. Explanations of fertility must include all of these reasons and consider how they interrelate to one another as well.

The importance of these factors and how they interact with one another varies between women and men as well as with respect to the first child and later children. We must make the basic assumption that parents decide successively for or against a(nother) child, and thus that they do not stick to a specific number of children set in advance.

Individualisation and fertility

Motivations for the decision to become a parent are subject to historical transformation. Today the central motivations are the welfare of the child, the parent-child relationship and couple relationship, and the development and happiness of the individual – a trend that can be traced back to the social and cultural valorisation of the individual over the course of the last two centuries. The perception and value of childhood and children, of children's abilities and of their vulnerability have also undergone historical changes. In contemporary societies, the opportunities for the development of each individual child have priority over a greater total

number of children. Parents concentrate their material possibilities, their time, and their personal dedication on fewer children.

Costs of parenthood

Another important factor in explaining the desire to have children and its fulfilment are the disadvantages in everyday life that come with parenthood (decreased options and less independence, for example), especially those associated with participating in the workforce (so-called opportunity costs). This includes not only the income lost during childcare, but also the higher risk of joblessness and the difficulty of re-entering the workforce after a lengthy time off for family reasons.

The extent of these costs depends on the economic, institutional, and cultural constitution of a society. For example, the possibility of combining employment and parenthood will vary according to the development of childcare infrastructure or the availability of flexible hours in the workplace and other flexible arrangements in the context of gainful employment. The direct costs of children (their maintenance, for example) and the compensation that the welfare state provides for these expenses will also vary by country.

Societal models and norms

Even though the decision to have a child today is usually one taken deliberately, it is not an economically rational decision. Non-material criteria are also of great importance. What is more, the advantages, disadvantages, and risks of parenthood cannot be precisely estimated, so societal models and norms (which are also conveyed through one's immediate social environment) play an important role. Individual characteristics and motivations should likewise be taken into account, as should intuitive maxims of behaviour.

The importance of partnerships for fertility

Children are overwhelmingly conceived and born within partnerships and in consensus between both partners. Birth rates are therefore influenced by the possibilities for couple partners. Birth rates are therefore influenced by the possibilities for couple partners, the forms of partnership, and the stability of partnerships. This also means that life courses and motives must be coordinated between partners.

10. TRANSFORMATIONS IN SEXUAL BEHAVIOUR

Sexual behaviour has undergone a stark transformation since the 1960s. Because of the liberalisation of social attitudes to morality, people today have more sexual experiences – the number of premarital and marital partnerships and contacts has risen – and often have a higher level of sexual well-being. This is particularly true for women, for whom the previously strong regimentation of their sexuality has markedly decreased.

Since sexual behaviour is socially and culturally influenced and is an element of more widely defined gender roles, we can assume that the still comparatively strong orientation towards traditional role models in Germany, Austria, and Switzerland also influences sexual behaviour and the expectations and interpretations connected to it.

Another important aspect is the structures of the working world and the working conditions in individual occupational categories that are confronted with the demands of around-the-clock availability and sweeping flexibility. A higher degree of mobility, irregular working hours, and a permanently high stress level or even repeated jobless phases alter sexual behaviour and in the process also influence the quality of partnerships.

11. POSTPONEMENT AND RECUPERATION

The decline in births in recent decades closely correlates with postponing the first child until a later age. In West Germany, Switzerland, and Austria, this process began with the cohort born in 1950. In East Germany, the cohorts born in the 1970s were the first to postpone starting a family. It was not until relatively late after reunification that the age at first birth in eastern Germany rose, but the change was abrupt. We can trace these developments using the average age at first birth: in West Germany between 1970 and 2008 this rose from 23.8 to 28.7, whereas in East Germany it remained at 22.5 for two decades and only rose to 27.5 between 1990 and 2008. The average age at first birth in Austria in 2008 was 27.8, and in Switzerland it was 29.6, currently the highest in Europe.

Cohort analyses for other countries with a high level of fertility show that postponing births until a later age does not necessarily have to lead to a decline in

the final number of children, but rather that childbearing will simply occur later. This phenomenon, known as the 'recuperation effect', is less pronounced in Austria, Germany, and Switzerland than in countries such as France, Sweden, or the Netherlands. This recuperation effect is weaker for third and fourth children than it is for the first births.

In contrast to many other European countries that since 2000 have had no further rise in women's average age at first birth, Germany, Austria, and Switzerland have seen continuing increases. If the process of birth postponement were to come to an end in the next few years, we could expect a slight rise in period fertility in the three countries that would range from 1.5 to 1.7. We do not expect the three comparison countries to match the birth frequency in the Nordic countries, France, or the UK, where the period and cohort fertility rates range from approximately 1.9 to 2.0, at any time in the near future.

12. REASONS FOR LATE PARENTHOOD

In recent years, women's age at the birth of their first child has continually risen. Many factors are responsible. Especially important ones are the expansion of time spent on education, later entry into professional life and the difficult conditions for doing so, as well as the higher demands for personal development. Expectations of the quality of a partnership also play a role. These can lead a longer dating phase and a higher percentage of partnerships, or to having no partner at all.

13. THE DESIRE TO HAVE CHILDREN AND THE NUMBER OF CHILDREN REALISED

There is less desire to have children in the three countries of our comparison than in most other European countries. Indications of the number of children desired are subject to uncertainty, since the desire to have children changes over the life course. In general, there is a discrepancy between the desired (higher) number of children, and the (lower) number actually realised. This is known as the 'fertility gap' and plays an important role in public and political discourse on questions of policy formation. Family and social policy should be conceived in such a way that they help couples to bridge this gap between desire and reality.

Measuring this discrepancy is problematic, however. On the one hand, the concepts for recording reproductive decisions (fertility ideals and fertility intentions) are ambivalent, since the boundaries between personal and social ideals are often blurred. On the other, the comparison to actual measured fertility is a crucial source of misinterpretation. The desired number of children is measured by asking individuals of various ages at a certain point in time, whereas the number of children realised must be measured using current period fertility. But comparison of these two measures does not always represent the fertility gap correctly. The fertility gap is more accurately reproduced by reconciling the number of children initially desired by a given birth cohort with the number of children ultimately realised by this cohort.

Panel studies can be used to analyse how the desire to have children changes over the life course. Such studies involve surveying the same people repeatedly over a longer period of time. They also allow for the examination of how and whether the desire to have children changes over the life course, or how and whether an existing desire to have children is actually realised, postponed further, or completely abandoned. Ideally, such surveys can also trace the reasons for each respective decision.

14. FAMILY AND FERTILITY-RELATED MODELS AND NORMS

Social models and norms that are directed at regulating family life and behaviour within families influence fertility in various ways. For example, they define the rights and obligations that parents have to their children because they express expectations of what constitutes appropriate childcare (inside or outside the home) as well as the type and amount of the expenditures that parents should make for their children (e.g., to educate them).

Norms and models influence not only the 'costs', but also the 'utility' of children to their parents, for example by means of children's importance to the social status of their parents. Alongside norms that influence the cost and utility of parenthood, there are also those that influence the appropriate division of labour between men and women in the household and in childrearing – and thereby the division of costs and risks that a child signifies for parents. Other norms are directed specifically towards fertility, such as those that set a 'correct' time for giving birth, a 'correct' interval between births, or an 'appropriate' number of children.

15. INTENDED AND UNINTENDED CHILDLESSNESS

In the countries of our comparison, the percentage of childless women is higher than in most other European countries. This is particularly the case for western Germany and Switzerland. In eastern Germany, women are still much less likely to remain childless than in western Germany, Austria, and Switzerland.

The extent of childlessness in Germany has been partially overestimated in past analyses, largely because of a lack of precise data. Current results show that about 22 per cent of West German women from the 1964-1968 birth cohorts have remained childless; the figure for East German women is approximately 11 per cent. Comparable with the West German results is the development in Austria and Switzerland, where childlessness has also been climbing beginning with the 1940s cohorts: of the women born in 1965, 17 per cent in Austria and 21 per cent in Switzerland have no children of their own.

In the three countries of our comparison, the percentage of lifelong childlessness is higher among well-educated women than among women with less education. In public debate, childlessness is often only linked to the decline in births of more recent times. If we include the historical view, however, we see that childlessness among women born in 1900 was similar or even higher than it is today.

16. DECREASING FERTILITY AND INCREASING MEDICAL RISKS WITH RISING AGE IN MEN AND WOMEN

As men's and women's ages rise, the probability of conceiving and giving birth to a living child decreases. This is primarily attributable to the decrease in women's fertility, specifically to the decline in ovary function, which begins gradually after about age 30 and decreases markedly from about age 35, but can also be traced to the decline in sperm quality that begins at age 40.

In addition, the incidence of miscarriage and of chromosomal abnormalities (at birth most frequently trisomy 21, or Down's Syndrome) increases as women age. Other risks also arise significantly more frequently beginning at approximately age 40: medical disorders such as diabetes mellitus or chronic high blood pressure are detected more often. Early diagnosis and treatment is important to avoid complications in pregnancy. The incidence of disorders that arise from pregnancy,

such as gestational diabetes or pregnancy-induced hypertension, also rises as age increases, as do placental disturbances, multiple pregnancies, preterm births, low birth weights, intrauterine growth retardation, perinatal mortality, and delivery by Caesarean section. Risks associated with rising age in men (beginning at about age 40) include miscarriages, preterm births, pregnancy-related illnesses, low birth weights, growth restriction, and perinatal mortality.

We must stress that in absolute numbers, these risks are distinctly low, but they are elevated in comparison to younger men and women. A woman who chooses not to realise her desire to have children until after age 35 or a man who decides to have a child after the age of 40 will still have a far greater chance over two years of having a child naturally than of becoming childless unintentionally.

Healthy women over 35 and women in whom these risks are recognised in a timely manner and receive optimal care will usually experience their pregnancies without complications and bear healthy children. The population often has inadequate knowledge of these risks, as well as of the chances of later parenthood.

17. DEVELOPMENT OF FECUNDITY

Female fecundity (meaning the establishment of the ovarian reserve in the foetal period, the beginning and the end of individual fertility and with it the biological capability of conceiving children) and male fecundity (the production of healthy, vital sperm to father children) continue to play an essential role in fertility along with a diverse variety of other influences.

There are no controlled longitudinal studies on the development of fecundity in women and semen quality in men that consist of several birth cohorts. Studies thus far do not show a decline in sperm quality. As measured by time to pregnancy (TTP), the length of time until a woman becomes pregnant, the fecundity of sexually active couples not using contraception has remained the same or has even improved in comparison to earlier eras.

There is poor data evidence for many of the relationships to fecundity. Expanding public health research in Germany would in particular allow knowledge in the area of reproduction, reproductive medicine, and foetal medicine, and the advice given to those affected, to be based on a surer foundation. Since the phases of

life in which couples plan for children have changed, public health research could well consider this fact in the further development of contraceptive methods for men and women.

18. POSSIBLE CONSTRAINTS ON FECUNDITY

The human organism is subject to various influence factors over the life course (age, lifestyle, environmental conditions) that also affect individual fertility. There is a significant negative effect on fecundity among women who are overweight (gradually for a body mass index of over 24, markedly for BMIs over 30) or underweight (BMI under 19), frequent smokers, or heavy drinkers. Other lifestyle factors have not yet been proven to exert any considerable influence.

Sexually transmitted infections can also damage fecundity and even lead to unintended childlessness. Genital chlamydia infection is the most frequent sexually transmitted bacterial infection in the world. It generally does not show symptoms and can cause inflammation of the fallopian tubes and pelvic inflammatory disease (PID) in women, which can lead to sterility.

Chemicals such as pesticides, plasticisers, and solvents that could affect the hormonal systems of women and men are a fixture in people's professional and personal environments. These 'endocrine disruptors' are either natural substances from plants or synthetic substances from industry and agriculture.

19. INFERTILITY

Data from the Human Fertilisation Embryology Authority from 2010 show that in 2008, almost as many women (28.5 per cent) as men (29.7 per cent) sought fertility treatment from a doctor. About a quarter of patients treated had unexplained infertility, and in 10 per cent of cases the cause of infertility came from both partners. The rest of the cases could be attributed to other factors, or there was no male partner, or serious hereditary disorders had to be excluded.

The clinical definition from the World Health Organisation (WHO) defines a couple as infertile when they fail to achieve a clinical pregnancy after one year of regular intercourse without the use of contraception.

After one year of infertility, a couple still have a 50% chance of having a child the second year. Even after approximately five years there remains a small percentage of parents who have a small chance of the woman becoming pregnant.

20. PRE-IMPLANTATION GENETIC DIAGNOSIS

When a family has a history of a serious hereditary disease that is genetically transferable, pre-implantation genetic diagnosis (PGD) may be used on the embryo before implantation into the woman's uterus in order to clarify whether the embryo is a carrier of the disease. After hormonal stimulation, the oocytes are removed from the ovaries, and after they are fertilised in vitro with the man's sperm the resulting embryos are screened on the fourth day. Two cells are taken from the embryo and analysed for genetic alterations. Only the embryo that does not carry the genetic condition will be transferred to the woman's uterus. PGD has been allowed under specific conditions in Germany since the law was passed by the German Bundestag in July 2011. The draft for statutory regulation will be elaborated by the German Federal Ministry of Health.

PGD is currently banned in Austria, but there are efforts to restructure the regulation and allow PGD. In Switzerland, a law that will allow PGD is currently being worked on (as of July 2012) with the support of the National Council and the Council of States.

21. HETEROZYGOTE SCREENING

In some regions, healthy couples who want to have a child are already able to have a genetic test to determine whether they are at higher risk of having a child with an autosomal recessive genetic disorder, and more couples will be able to do so in the near future. Such 'heterozygote screening' requires that the person seeking the test receive good counselling on the chances and risks and it should not be left to the free market alone.

22. PRENATAL DIAGNOSIS

Prenatal diagnosis comprises a range of invasive (e.g., amniocentesis, chorionic villus sampling) and non-invasive (e.g., ultrasound, blood tests) testing methods to identify diseases, developmental anomalies, or growth restrictions in a timely manner. Screening methods for identifying chromosomal abnormalities have been notably improved. Since today individual risks can be better calculated, and the age of the pregnant woman, along with other parameters, is just one risk factor among others, the total number of invasive tests has declined markedly in recent years. In the near future maternal serum foetal DNA diagnosis, which requires only a simple blood sample and is already being used to screen for certain single-gene alterations (determining Rhesus factor and single-gene disorders in the embryo), may also be able to be used to determine trisomies in early pregnancy. Terminating the pregnancy would be possible through the administration of medications alone, rather than through a surgical procedure. The blood test is already being offered at the same time as a chorionic biopsy (after about the eighth week of pregnancy) to detect certain genetic alterations.

23. REPRODUCTIVE MEDICINE

After exhausting conservative treatment methods in reproductive medicine such as hormonal stimulation, insemination, and microsurgical operations to re-establish function in the fallopian tubes, couples in which the woman cannot conceive naturally can make use of assisted reproductive technology (ART) to fulfil their individual desire to have children.

In vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI)

IVF and ICSI are available as extracorporeal insemination methods. According to the 2009 German IVF Register (DIR), in the period from 2005 to 2009 the average rate of pregnancy per embryo transfer through IVF and ICSI – after the transfer of two 'ideal' embryos – was 39.1 per cent for women under age 34, 31.0 per cent for women 35 to 39, and 16.5 per cent for women over 40. The ovarian reserve, meaning the number of oocytes remaining and therefore the chance of a pregnancy, can vary greatly by individual. AMH (anti-Müllerian hormone) and AFC (antral follicle count) can indicate the prospects for successful fertility treatment.

Elective single embryo transfer (eSET)

Elective single embryo transfer (eSET) is practiced in most European countries in order to avoid the high percentage of multiple pregnancies (about 20 per cent in the three countries of our comparison), which are linked to elevated medical risks for both the mother and the children. eSET means that the embryo with the best development potential is selected for uterine implantation. It is widely assumed that the German Embryo Protection Act bans transfers of this type; just as widespread is the view that the number of embryos developed in a cycle should be no more than the number that are to be transferred to the woman, at most three (the 'rule of three'). Switzerland also prohibits the selection of embryos, and allows only as many embryos to be cultivated as are to be transferred to the woman, with a maximum of three. These legal restrictions have created a real trend of 'reproductive tourism' to other countries.

Cryopreservation

Cryopreservation (freezing) of oocytes at the pronuclear stage (before the fusion of egg cell nucleus and sperm cell nucleus, meaning the maternal and paternal pronuclei), of fertilised oocytes, and of surplus embryos (banned only in Switzerland) has been practiced in all three countries of our comparison since the 1980s. The 'vitrification' method of ultra-rapid freezing is being used ever more frequently, since it can achieve pregnancy rates similar to those using freshly harvested oocytes. Indications range from facilitating a controlled elective transfer of embryos and facilitating another pregnancy at a later date to preserving fecundity before cancer treatment (by freezing oocytes, pronuclear oocytes, or ovarian tissue) or preserving fecundity in young women by freezing oocytes or pronuclear oocytes (still at the experimental stage and not yet legally permitted). Sperm or testicular tissue can be cryopreserved to preserve fecundity in men facing cancer treatment.

Sperm donation and egg donation

On 3 November 2011, the Grand Chamber of the European Court of Human Rights (ECHR) ruled that the Austrian ban on the use of donated sperm and/or eggs in treatments of assisted reproductive technology (ART) did not violate the European Convention on Human Rights. The contrary lower-court judgement issued in 2010 by the Chamber of the ECHR had invoked the ban on unequal treatment (in comparison to other couples) and the right to respect for family life guaranteed by the Convention.

In Germany and Switzerland, sperm donation (heterologous insemination) is allowed, but egg donation is prohibited. In Switzerland, a child born from donated sperm cannot bring any legal claim against the sperm donor. In Austria, current law allows a donor to donate sperm for insemination with no legal consequences. In Germany, by contrast, sperm donors are not legally protected from financial claims.

Surrogacy

Surrogacy is banned in Germany, Austria, and Switzerland. Other European countries, for example Belgium, England, Spain, and Greece, as well as the United States, Australia, and India permit the contracting of a surrogate to carry a child when the mother cannot have a child on her own.

Assumption of costs through national health insurance

The entry into force of Germany's Health Care Modernisation Act in January 2004 ended full insurance coverage for four cycles of fertility treatment and changed this to a maximum of three treatment cycles at 50 per cent reimbursement. The remaining costs are the responsibility of the insured. Half of the cost of insemination also must be paid by the insured. This change in the law had the result of reducing fertility treatments in 2005 by half. A total of 13,000 fewer children were born. Even today (July 2011), there are not nearly as many children born annually through ART as there were before the change in the law.

Preserving fecundity before cancer treatment

It used to be that successful radiation or chemotherapy treatment for cancer in both men and women would frequently mean permanent infertility. Today there are opportunities to preserve one's fecundity, some of which are already in limited use.

24. RESTRICTING ART TO COUPLES WITH UNINTENDED CHILDLESSNESS

Assisted reproductive medicine is not an appropriate measure to balance out declining birth rates. It should remain limited to treating couples who cannot fulfil their desire to conceive children naturally. ART measures can have physical and psychological side effects, and the success rate is only around 50 per cent even after all possibilities for fertility treatment have been exhausted, meaning that half of all couples seeking treatment remain childless.

25. KNOWLEDGE OF SEXUALITY AND FERTILITY IN CHILDREN AND ADOLESCENTS

All three countries in our study – Germany, Austria, and Switzerland – make sex education a part of biology instruction in the school curriculum for various academic years. This generally involves teaching the biological facts of puberty, sexuality, and pregnancy, as well as education about contraception and sexually transmitted infections. Statistical surveys, however, show that adolescents do not understand how these complex relationships between anatomical knowledge, sexuality, fertility, and pregnancy relate to their own bodies and what they observe in themselves. Appreciating their own bodies is also a prerequisite for dealing responsibly with health, fertility, and sexuality and therefore the foundation of any type of prevention. Adolescents need competent people they can talk to right when puberty begins, who will help them to break down their fears and uncertainties, strengthen their self-esteem and develop a positive sense of their own bodies. Instructors should use caution and sensitivity in their responses to the individual situations of migrant children, who may have other values and attitudes towards sexuality because of their different cultures and religious beliefs.

Not enough time is devoted to the desire to have children, which plays an important role in young people's life plans, particularly for girls. Instruction must do more to bring together fertility and sexuality. Astonishingly enough, few in today's media-savvy younger generation have knowledge of men's and women's fertility – especially a woman's monthly cycle and therefore the fertile phase for conception. Becoming acquainted with one's own fertility is a precondition for using contraception appropriately and safely.

Surveys likewise show that only a minority of young people know when women's, but also men's, age-related fertility begins to decline, and with it the chance of having a child. There is also not nearly enough knowledge about how to preserve one's fertility through a healthy lifestyle (e.g. avoiding smoking and heavy drinking, and not becoming over- or underweight) and protection from sexually transmitted infections, especially chlamydia.

Adolescents frequently have incomplete knowledge of how to obtain and use contraception. For a long time the emphasis was only on preventing unintended pregnancy. But contraceptives also make it possible for people who want children to include them in their plans for the life course. Fertility is part of male and female

identity, and young people should develop the awareness to treasure it and protect it as a thing of value.

For example, when girls are first prescribed the Pill, there are special 'girls' consultations' (in Germany) or 'first love ambulances' in clinics (Austria) where they can consult a gynaecologist in confidence about sexuality and fertility issues that they do not wish to discuss with their parents or in school. Boys, by contrast, are left to their own insecurities, fears, and questions. We need dedicated consultations for boys.

26. THE VARIETY OF INSTITUTIONS AND ACTORS WITH RELEVANCE FOR FAMILY POLICY

Family policy comprises a variety of political measures. These are frequently located not only within the sphere of jurisdiction of various federal ministries, but also within the jurisdiction of the federal states, cantons, or local communities. Special-interest groups such as unions and employers' associations are also instrumental in decisions pertaining to the family because of their involvement in social, health, labour market, wage, and economic policy. Employers also set crucial underlying conditions for families through policies on working time as well as social policies at the company level. In Germany, Austria, and Switzerland, a variety of non-profit institutions (such as welfare organisations) also contribute to an effective family policy. The transformations in the life course, the time constraints because of changes in the working world, and the diverse living conditions of parents and children in different regions lead to constant processes of adjustment both in family policy and in the wider terms of the society.

27. CHILD AND PARENTAL WELL-BEING AS A PRIMARY GOAL OF FAMILY POLICY

A family policy that does justice to current social developments and is also geared towards a future with children should have as its primary goal the well-being of (potential) parents and children. The aim is to design optimal conditions for children's development and to enable parents to encourage, support, and supervise their children's development the best that they possibly can. An appropriate

family policy above all gives parents time for their family, financial security, and opportunities for participation, and guarantees these to their children as well.

For this reason, a family policy geared towards the well-being of children and parents is also rooted in reliability, particularly when individual, professional, social, economic, or societal conditions change. This entails family policy measures that are suited to well-being and are consistent and coherent with respect to this goal. The primary goal of a family policy that is geared to a future with children is therefore not a rise in birth rates, the promotion of specific family models, the division of labour between the sexes, or the regulation of development in immigration or the labour market. Instead, infrastructure services and measures related to time policy are of paramount importance, as is financial support for families. The well-being of children and parents can only be ensured if family policy comprises this family policy triad of time, infrastructure, and money. This can also mean that family policy may have various main focuses depending on specific parental and child needs.

Almost all parents would like for their children to develop to their full potential. The task of society is to enable this and support it. Legal norms such as the UN Convention on the Rights of the Child and the constitutions of modern democracies clearly demonstrate that children's individual rights must be respected absolutely, and that adults must assert their influence over children in a way that is exclusively in the interests of the child and not their own in cases where the two conflict. At the same time, it is key to parental well-being that parents be enabled to conduct their lives in a way that corresponds to their individual notions of a life with children.

28. DIMENSIONS OF CHILD AND PARENTAL WELL-BEING

Objective and subjective factors influence the well-being of children and (potential) parents. Child and parental well-being each comprise several dimensions. International research uses six classified and measurable dimensions of child well-being. These are: (1) material well-being, (2) health and safety, (3) education, (4) family and peer relationships, (5) behaviour and risks, and (6) subjective well-being. Parental well-being is based on similar, appropriately nuanced components, with gainful employment in particular playing an additional role. The well-being of children and of parents exert a substantial influence on one another. But conflicting goals are conceivable, for example when parents' professional obligations

collide with children's need for care. The well-being of both actors, children as well as parents, is an important point of reference for family policy.

29. THE FAMILY POLICY TRIAD: TIME, INFRASTRUCTURE, AND MONEY

Family policy is comprised of a combination of time, infrastructure, and money. 'Time policy' is the term for policy measures that are related to all time relevant issues, such as the structure of hours for care, supervision, education, and work. It pertains to regulations that apply to time in everyday life, such as those on part-time work and the organisation of working hours. Time policy also relates to measures that apply to the time taken for care during the life course, such as maternity protection, parental leave, and time off for care-needing dependants. 'Infrastructure policy' refers to policies related to in-kind benefits/transfers and also includes policies on a community level. Examples of infrastructure policy include policies related to early childhood education and care and before- and after-school care schemes, as well as schools, parental counselling, and child guidance. 'Monetary policy' in the context of family policy covers various measures involving cash benefits and tax regulations for instance child benefits, advance maintenance payments, and all manner of child allowances. Since there are some phases of life in which looking after children takes more time, money, and infrastructural support than in others, in modern family policy the three dimensions of the triad should be conceived with a view to the entire life course.

30. MODELS OF FAMILY TIME IN GERMANY, AUSTRIA, AND SWITZERLAND

In Germany at present, it is only possible to claim family time (in the form of parental leave) in the first three years of a child's life, or until the eighth year with restrictions. Parents receive a cash benefit based on their income for fourteen months (a maximum of twelve months per parent). Parental leave in Austria can be taken until the child's second birthday, with the possibility of postponing part of it until the end of the child's seventh year; cash benefits (childcare benefit) are paid until the child's third birthday at the latest.

In Austria, similar to in Germany, employees can also negotiate parental part-time work (part-time employment) under certain conditions until the child's seventh birthday. Switzerland has no legally mandated parental leave beyond a law permitting part-time work for a finite period.

Models of family time can end up correcting for those phases in which it seems almost impossible to reconcile care work and paid work. At the same time, as chronological age increases and the number of productive years increases as well, there is inherently more leeway to shift the periods of time in which one works. Time off for family could then be taken closer to midlife if we were to keep in mind the fact that subsequent phases of employment do not have to end at age 50 or 60.

31. REGIONAL AND CULTURAL DIVERSITY

Regional and cultural diversity requires the necessary differentiation and accuracy of fit in instruments of family policy. Features of this diversity that are relevant for the corresponding organisation and implementation of family policy are the respective institutions, regional differences, cultural contexts, and various groups. The institutions vary in that each has its own different history, as the three countries of our comparison demonstrate. Similarly, the regional diversity in the labour market, in urbanisation, and in publicly financed infrastructure necessitates differentiated policies for each. The cultural conditions that have arisen historically and the present social developments are likewise important contextual factors for a family policy that is oriented towards well-being in parents and children. Increases in different lifestyles, more changes in lifestyle over the life course and greater diversity in the population because of immigration all signify the multiplicity of family policy needs. The regional, institutional, and cultural heterogeneity requires policies that do justice to this diversity.

32. LABOUR FORCE PARTICIPATION OF WOMEN AND MOTHERS

Employment brings economic benefits, imparts self-worth and social status, and strengthens people's autonomy. A central goal of modern family policy is therefore to make it possible to combine work and family life; in other words, to increase the opportunities for women and mothers to participate in the working world.

When household income is based on two incomes, the material and social well-being of families will rise, at least in the medium term. Higher household incomes also decrease the proportional costs of children and the extent of child poverty. More strongly integrating mothers into the labour market also protects against the economic risks of divorce or separation.

33. MEN'S PARTICIPATION IN FAMILY WORK

Responsibility for housework and family obligations in the three countries is unequally distributed between partners. Since men's participation in household and family obligations has so far been low, policies should focus on the obstacles and social constraints to such participation.

A key problem is the low flexibility in the working world today and how social legislation affects the working time. Added to this is the widespread expectation among employers of employees' complete and unconditional availability in their careers and gainful employment, which strengthens the traditional division of labour between the sexes. But this need not be the case, as we can see from examples in other countries, where men are able to take on managerial roles on a part-time basis because there is support for part-time work among corporations.

34. THE EFFECT OF FAMILY POLICY ON FERTILITY

The effect that family policy has on fertility has been examined in many studies in economics and the social sciences. The currently available evaluation studies show clearly that the relationships between family policy and fertility are exceedingly complex. Nevertheless, analyses of both individual data (micro analyses) and aggregate data (macro analyses) indicate that improving infrastructure and raising cash benefit transfers can increase the probability of a decision to have children.

But we cannot assume universally valid causal relationships here: for example, micro studies have shown that the effects of individual family policy measures vary according to the parents' socio-economic status and the number of children. Macro and micro studies have also illustrated that economic, cultural, historical, and political-institutional factors can stimulate or mitigate these effects. Evaluation studies of time-related measures such as parental leave likewise show that the influence on the childbearing behaviour of parents depends upon how these measures are constructed and how they interact with economic, cultural, and social factors.

In this respect we can state that the family policy triad of time, money, and infrastructure is relevant to the decision to have children, but the degree of policy effectiveness largely depends on the concrete construction of the measure, the starting level, and the other socio-economic and regional factors. What is more,

family policy measures usually show no effects on fertility in the short term, since the decision to have children is influenced by the perception of family policy conditions and not just the implementation of one single family policy instrument.

35. THE EFFECT OF FAMILY POLICY ON CHILD AND PARENTAL WELL-BEING

The effect of family policy can also be analysed not only with respect to fertility, as in many studies, but also in view of the well-being of parents and children. The interplay of family policy measures on time, infrastructure, and money can have an impact on components of child and parental well-being in varying combinations and intensities. Even if there has only been initial research into this impact thus far, we can assume that many principles of the study of family policy's impact on fertility behaviour are transferable, for example the significance of underlying economic, social, and institutional conditions as well as the differentiated effects on various groups of people. We can also assume that the effect on fertility comes from an improvement in well-being.

36. FERTILITY ASSUMPTIONS AND POPULATION FORECASTS

Fertility plays a key role in population forecasts. Past population forecasts have underestimated the dynamic nature of the declining birth rate. In the meantime, the assumptions in official forecasts have explicitly taken the most recent insights from fertility analysis into account. Implementing this knowledge into the modelling of the future course of fertility rates is problematic, primarily because the effects of changes in timing, that is in the age of the mother when giving birth (tempo effects), are frequently not considered. In the same way, there is usually no observation of trends in fertility that are differentiated by birth order. Accordingly the assumptions about fertility are sometimes inconsistent.

In order to avoid these inconsistencies, the fertility assumptions in population forecasts should be made on a cohort basis. This way a perspective that encompasses the entire life course can be integrated into fertility assumptions as well, so as to illustrate the developments of birth postponement as well as the recuperation process at higher ages.

37. FUTURE DEVELOPMENTS IN FERTILITY

It is not likely that the average number of children per woman in the coming decades will markedly exceed the value of two that has been achieved in some European societies at present. But the low numbers of children in countries such as Germany, Austria, and Switzerland could increase if we can manage to eliminate the societal obstacles in the way.

38. THE STATE OF DEMOGRAPHIC DATA

On the whole, data for Austria, Germany, and Switzerland has improved considerably in recent decades. Changes in the legal basis for official statistics will make possible the consistent and multifaceted observation of fertility developments in the future, since official birth statistics in all three countries now record information on the order in which a woman gives birth to her children. Fertility data of this type have been officially available for Germany since 2009 and for Switzerland since 2006. In Austria, the biological number of children has been included in birth statistics since 1984. In the future, such data collection will allow statements to be made with certainty on the distribution of numbers of children and the extent of childlessness. Because of insufficient data, estimates of childlessness in the past led to very uncertain results that varied greatly from one another according to the source of data.

In recent years, there have been great efforts to establish comparable databases in order to compile macro data on fertility across countries. A heretofore unique project is the Human Fertility Database, which provides high-quality and comparable fertility data online. Germany (separated into western and eastern Germany), Austria, and Switzerland are already included in this database.

RECOMMENDATIONS

Part of the task and identity of scientific academies is to provide advice on questions of the future of society. Not only is there a special responsibility inherent in this task, it also has a particularly good chance of having an impact.

A crucial integrative element of the conception of this entire project was therefore to derive concrete recommendations from our analysis and to make these public. The following represents the Research Group's consensus recommendations for social and family policy, medicine, education and health policy, research, and data collection.

OVERVIEW

1. RECOMMENDATIONS FOR SOCIAL AND FAMILY POLICY

a) Time policy

Overall recommendation

Respect the integration of daily time and lifetime

Expand flexible models of working time and guarantee time sovereignty

Implement models of family time

Recommendations for the scientific community

b) Monetary policy

Overall recommendation

Further development of national benefits towards a specific guaranteed child allowance ('Kindergrundsicherung')

Examine models of children's funds ('Kinderkassen')

Public subsidisation of social insurance contributions

c) Infrastructure policy

Overall recommendation

Ensure quantity of childcare along with quality

Guarantee reliable all-day care for schoolchildren nationwide
Promote centres for families ('Zentren für Familien')
Enhance local family policy offerings
Design cities and surroundings to be family-friendly
Introduce 'family mainstreaming'

2. RECOMMENDATIONS FOR MEDICINE AND HEALTH POLICY

Examining the legal situation of reproductive medicine
Counselling in cases of severe genetic disease in families
Strengthening of endocrinology and reproductive medicine departments at universities
Screening for Chlamydia trachomatis infection and introduction of a reporting obligation
Introduce screening for gestational diabetes

3. EDUCATION ABOUT FERTILITY AND FECUNDITY AS WELL AS ABOUT THE DESIRE OVER THE LIFE COURSE TO HAVE CHILDREN

Education of children and adolescents
Education of women, men, and couples who want to have children
Counselling for women, men, and couples who want to have children
Counselling and prevention for pregnant women
Education and counselling before treatment with assisted reproductive technology (ART)

4. RESEARCH RECOMMENDATIONS

Research on the desire to have children and its realisation
Study the effects and the transformation of family and fertility models and social norms

Learn to better understand couple dynamics in fertility decisions
Study childlessness and the postponement of births
Carry out representative studies on sexual behaviour
Prospective studies on developments in fecundity
Public health research within the context of reproductive medicine
Improve evaluation research on the influence of family policy on fertility
Establish evaluation research on the influence of family policy on child and parental well-being

5. RECOMMENDATIONS FOR DATA COLLECTION

Make register and census data in line with international standards available
Improve the measurement of fertility
Data for multi-level analyses
Differentiate fertility data by migration background
Recommendations for the German microcensus
Expand panel studies and establish them in a sustainable manner
Include information on sexual behaviour and contraception in standard surveys
Support qualitative studies

1. RECOMMENDATIONS FOR SOCIAL AND FAMILY POLICY

a) Time policy

Overall recommendation

For many years, the family policy in Germany, Austria, and Switzerland was dominated by monetary incentives through various kinds of benefits and tax policies. In Germany, this monetary policy was complemented by a three-year leave for childrearing that was formulated to be gender-neutral; in Austria, it was complemented by a two-year parental leave (which for a long time was formally conceived to be only for mothers) and by a three-year childcare benefit. Only in recent years has there been an increasing orientation in Germany and Austria towards time policy that is meant to make it easier for both parents to care for small children at home. The introduction of maternity leave in 2005 in Switzerland was a national step towards a time policy for mothers in the workforce. The time policy in all three countries is accompanied by a stronger relative concentration on infrastructure policy for families. A family-related time policy with the accompanying infrastructure is of great importance for the well-being of (potential) parents and children. This includes on the one hand a family-conscious structuring of time in daily life and on the other a family-conscious structuring of time for care, education, and gainful employment over the life course. Both time dimensions are important for families.

Respect the integration of daily time and lifetime

Families must be able to integrate time for care as well as time for education and gainful employment in their everyday lives.

Individuals differ on how they prefer to prioritise time within the various spheres of their lives. This diversity should be accounted for in family policy. Measures in time policy should make it possible for families to have more time sovereignty and flexibility in everyday life and the associated measures must be flanked by coherent infrastructure and monetary policy.

Families need different amounts of common time together to be able to care for one another, interspersed through the different phases of life. This shared time for caring cannot always be planned or set out in advance. A time policy that covers the whole life course must take account of various time needs in various phases of life. Such a policy should give families a reliable time window for certain phases of life that provides structure while being flexible at the same time. It should offer

reliability throughout the life course and ensure time sovereignty. Families must be able to assume with certainty that in certain phases of life – at the birth of a child, or during a change in schools, when moving house or when a child, parent, or caregiver is ill – that they have sufficient time available for care and for the needs of individual family members.

For this reason, there should also be time options available after children no longer need constant supervision. Previous career patterns must therefore be reconsidered in view of the entire life course: questions dealing with parents' temporary withdrawal from the workforce, the reduction of working hours in certain phases of life, professional security, and career perspectives are important issues that affect the compatibility of work and family throughout the life course. These temporary reductions in work throughout the life course, amid a (working) lifetime that is longer on the whole, correspond well to suggestions presented by scholars such as those from the joint academies' initiative 'Ageing in Germany', supported by the German National Academy of Sciences Leopoldina and the German National Academy of Science and Engineering acatech. For Germany, Austria, and Switzerland, the present midlife concentration of lifetime hours worked should therefore be replaced by a flexible corrective that also involves extending the working lifetime.

Time policy measures have a special effect on actors in the labour market. This is why the recommendations in this area are also directed to unions, employers' associations, and businesses.

All of them must be aware that paid work and care work are not part of a hierarchy; rather, they should each have equal importance in society. But time policy considerations will vary by the profession, sphere of activity, and field of industry. The corresponding particularities should therefore be taken into account in collective bargaining and contractual negotiations.

Expand flexible models of working time and guarantee time sovereignty

An important continuing recommendation regarding time is to increase the prevalence of flexible working (time) models that allow families to achieve more time sovereignty in everyday life. We call for those mothers and fathers who prefer part-time work to be categorically allowed to take the desired amount. Not only are the number of hours of work crucial here, but the issue of time sovereignty as well, which can vary in how it is distributed between employers and employees. In

many professional fields flexitime, teleworking, homeworking, and working-time accounts are possible alternatives that can provide time sovereignty to working parents. One goal in particular that can be achieved by allowing men to work part-time is an equal division of labour between the sexes. Different, flexible solution processes are necessary for each profession and field of industry.

In addition, we urge that the explicit and implicit career obstacles that part-time work implies be systematically dismantled. Models for part-time work among highly qualified professionals are also needed, which would improve the transition to management positions and the opportunities for continuing education, among other things. In addition, it is important for part-time posts that it be possible to return or transition into a full-time post. The success of such models is also contingent on their not engendering any significant long-term or life-course disadvantage among workers who decide to use this model of combining paid work and care work. Social partners, businesses, and work colleagues are all needed in order to determine this. Publicly initiated programmes, such as the 'Career and Family Audit' programme in Germany, can help raise awareness of opportunities related to working time that are intended to support parents. Concrete solutions must be implemented at the company level. Such models could also end up being a competitive advantage for employers who face shortages in skilled employees.

Implement models of family time

We recommend expanding existing models of family time, extending them to the entire life course, compensating for lost wages through corresponding financial benefits, and ensuring such models through the appropriate labour and social insurance legislation. Flexibility, reliability, and time sovereignty are necessary in more than just the first years of a child's life.

A specified, politically defined allotment of family time must be available throughout the life course. Anyone who provides care for others must have a legal claim to take this family time. These models should be clearly defined and calculable for all parties, so as to create reliable structures for employers as well. What is more, periods of family time should be provided to all population groups – not just those who are able to afford to take time off work thanks to sufficient financial resources. Compensation for the loss in income, therefore, is just as important as compulsory social insurance (health insurance, pension insurance, and unemployment insurance schemes).

In order to achieve such compensation, the corresponding models of family time could be combined with models of a publicly supported family time-credit system, in line with either the German model of educational credits or the Austrian model of educational leave. Switzerland has so far institutionalised neither parental leave nor the right to part-time work or family time specific to the life course. The country would do well to consider introducing regulations on parental leave and could benefit from the experiences of the other EU countries in the process.

Family time models should be expressly – and not just formally – directed at both parents. We also advocate extending models of family time beyond the immediate nuclear family. Such a choice would do justice to the increasing diversity in family forms, the alterations in one's family over the life course, and the changing need for family time throughout the lifespan. We view this as a path to greater social justice and equality, since equality of opportunity in the labour market is closely related to having equal time opportunities – with comparable possibilities to look after one's family members.

Recommendations for the scientific community

The scientific sphere is an example of a field of work in which the conflict between professional demands and life with one's children is particularly virulent. A number of European science organisations, including the German Research Foundation (DFG), have begun to address this conflict. In the policies for gender equality formulated by the DFG, for example, the foundation calls upon its member institutions to take active responsibility in helping both women and men combine family with a scientific career. Measures such as a 'dual career service' and offers such as childcare placement and emergency childminding during business trips could positively influence the status of facilities in competition for an excellent rating. In Germany and Austria, parental leave is by now also being taken into account in the evaluation of CVs or project proposals.

These standards may point in the direction of a partial 'deceleration' in the research field and increased reliability, but at the moment they are still at the level of best-practice models. To be able to care for children as part of one's own life within a scientific career, it is not enough to extend the time to the doctorate or even the length of work contracts in time-limited projects. There is additional need – for individual agreements, advising, and support during the time spent taking care of children – in order to reconcile the greatly varied times required for academic qualification with the individual care of children. The older idea of simply extending

the time periods comes from the assumption that after such periods, childcare is no longer significant, and those affected will be able to dedicate themselves to their work in the same way as before. But such ideas compel those who decide to have children to make an 'either/or' choice of childcare or academic qualification, rather than letting them plan for a 'both/and' individually.

This is why it makes sense to give up the concept of sequential balance between career and family and to develop a model instead that allows the individual integration of both spheres within one time perspective. But such models will only be successful if the rigid age restrictions and time limits in the scientific system are replaced by the opportunity for individual regulations, at the same time as career paths are created that provide younger researchers, both male and female, with an occupational perspective for the medium term. This integration-based perspective should be offered both during the qualification phase that lasts until the doctorate is awarded and as a basis for career planning through the professorship and beyond. For example, we could enable a life perspective of five to six years by creating teaching professorships and other positions, or more strongly link existing support programmes for parents to scientific institutions. Without structural changes to the scientific career path, however, we can assume that the programmes being developed now by research organisations to encourage junior researchers who have children will do little to eliminate the existing conflict between the demands of care and of research.

b) Monetary policy

Overall recommendation

Family policy in Germany and Austria, as well as in Switzerland, is characterised by families generally receiving various tax benefits and other benefits. The specific situation of certain families whose income and assets are especially poor in comparison to other families has less significance under such policy.

In accordance with a perspective that spans the entire life course, we also recommend adjusting cash benefits to give better consideration to such families. For example, some families – especially single mothers or fathers and families with three or more children – have only a limited ability to obtain sufficient financial resources during certain phases of life. These are frequently phases when the children are still small, but families with older children can also come up against financial limits when the parents are unemployed. This being the case, we advocate structuring

the cash benefits in such a way that they guarantee the children's well-being and opportunities to participate in society regardless of the financial means of their parents. Furthermore, the various monetary policy measures should be transparent and accessible to families, free of red tape, and reliably granted.

Further development of national benefits towards a specific guaranteed child allowance ('Kindergrundsicherung')

We recommend continuing to develop benefits for children in the direction of a universal specific guaranteed child allowance. A guaranteed child allowance bundles all benefits related to children into a single taxable benefit that provides security for the livelihood of the child. It links all transfer payments to the presence of children in the household. The aim is to directly ensure the material well-being of all children: one desired result is to equalise various family lifestyles.

At the same time, a guaranteed child allowance has the advantage of avoiding stigmatising families through means testing, since all families will benefit from the transfer as a matter of principle and its taxation will bring about an appropriate redistribution. In order to do justice to the cost of living in all three countries of our analysis, which can sometimes vary by region, additional regionalised benefits can represent a sensible option in the federal states. An example of such an element is built into the means-tested minimum insurance ('bedarfsorientierte Mindestsicherung') in Austria, which the German federal states could use to raise the Germany-wide minimum standard for children.

Further development of cash benefits for families in the direction of a guaranteed child allowance could enable a multitude of diverse benefits for children (German examples are the child benefit, supplementary child allowance, and diverse expenditures of the minimum social insurance system) to be bundled into one benefit. Various actors have estimated the fiscal costs of guaranteed child allowance models in Germany. The costs are considerable, but they must always be looked at in relation to their corresponding utility.

The likelihood of implementation of such plans increases when they are combined with specific suggestions for how to finance them. We therefore recommend that such suggestions be written into future policy.

Examine models of children's funds ('Kinderkassen')

The family benefits in Germany, Austria, and Switzerland vary. They are not always transparent, nor are they always sustainable over the long term. This means that potential parents cannot always rely on specific family policy benefits. The transparency and reliability of benefits is of great significance for families and potential parents, however. Because of the way they are financed, family benefits that are financed out of the national, regional, or canton budget are subject to annual budget negotiations and can therefore be categorically suspended or cut. Locating various family benefits in an independent institution (such as a 'parafiscus', an autonomous, semi-public organisation) within the multi-level governance system of a federal state could guarantee greater transparency and, in particular, could make benefits more reliable.

We recommend that there be more concrete discussion in Germany and Switzerland about introducing a children's fund. Both the general and specific benefits for certain families could come out of such a fund. This would have the advantage of keeping responsibility from becoming fragmented across different institutions related to social policy. A children's fund could be available as the reference point for family benefits throughout the life course and thus developed into a central destination for families and a family policy actor in society that would be explicitly responsible for the well-being of parents and children. Special programmes for socially disadvantaged children would also benefit from the regional infrastructure of children's funds if such funds are established as the go-to point for families.

Austria, with its Family Burden Equalisation Fund ('Familienlastenausgleichsfond') that is linked to a reserve fund, already has a system that exhibits many important characteristics of the children's fund suggested above. This means that Austria has already satisfied some of the institutional preconditions that will facilitate the move to having a children's fund as an independent institution.

Public subsidisation of social insurance contributions

Unlike the Austrian and Swiss systems, the German tax system offers married women at least an indirect incentive not to work or to reduce their gainful employment, independent of whether they have children in the household to care for. This affects not only how the difference in spousal income is split, but also the relatively high contributions to social insurance that two-earner couples must make. We advocate linking such relief more strongly to the care of others and less to the institution of marriage. For example, there could be discussion of more public subsidisation of social insurance contributions for those individuals who

perform care work while gainfully employed. The appropriate encouragement could produce incentives for combining care work with gainful employment.

c) Infrastructure policy

Overall recommendation

We recommend an infrastructure policy that focuses on child and parental well-being. A successful infrastructure policy should offer families a variety of services that they can rely on throughout the life course to assist them in supervising and supporting their children.

On the one hand, infrastructure policy must follow a coherent master plan so that the individual institutions are coordinated and children are provided with equal opportunities in life regardless of their regional location. On the other, the policy must correspond to the diverse array of lifestyles, childrearing cultures, time requirements, and underlying regional conditions. Taking this diversity into account is in line with the plurality and varying preferences of families.

External childcare options in day-care facilities can make sense for some parents; others may prefer individual childminders or nannies and still others may not want anyone outside the family to mind their children. Family policy should make it possible for parents to seek extrafamilial care and support for their children that is in line with their parental preferences. This is the only way to give (potential) parents the impression that their notions of care will be respected. Above all, there must be guarantees of the quality and reliability of external care in order to ensure the best possible development for children. Furthermore, an infrastructure policy should be oriented towards the needs of parents who wish to combine care work and gainful employment, even as infrastructure benefits are also important for families in which the parents for various reasons cannot pursue gainful employment.

Ensure quantity of childcare along with quality

The quantity of external childcare has been expanded of late in Austria, Germany, and Switzerland, meaning that all three countries have undertaken efforts at various levels to increase the spaces available in day-care facilities and with childminders. These efforts are important to ensure the well-being of parents and children. They also represent investments with a high rate of return for the economy as a whole.

In Germany, beginning in 2013 parents will have a legal claim to a space for their child in day care after the child's first birthday.

We recommend an even stronger focus on the pedagogical quality of external childcare. This is the only quality that ensures support for the corporeal, emotional, social, and intellectual well-being and development of the child, as well as support for the family (in the form of parental well-being) in the task of minding and bringing up the child. Qualitatively high-value childminding makes it easier for parents to put their child into someone else's care. This is why uniform minimum quality standards are important; what is more, regional and facility-specific particularities can present families with different options. But parents must be in the position to judge the pedagogical quality of facilities, for which systematically prepared information can be helpful in protecting consumers.

Good pedagogical quality is considerably associated with the training of childcare staff. Here the emphasis must be on attracting skilled workers to this profession through differentiated curricula that are orientated towards the latest research. These curricula must also differentiate between infants, toddlers, and preschoolers. More qualified people will be attracted to this profession if there are a variety of career possibilities open to these skilled workers. Specifically, the path to becoming an educator should not be a dead end that precludes further development or reorientation in favour of adjacent fields of education and childcare. These careers must become more interchangeable if we are to succeed in attracting well-qualified skilled workers (to return to them).

Guarantee reliable, all-day care for schoolchildren nationwide

We recommend using public funds to promote reliable all-day care offerings that enable supervision and support of schoolchildren nationwide. These offerings must also be of guaranteed good pedagogical quality. The number of all-day schools in Germany has increased in recent years, but further efforts will be necessary to ensure guaranteed supply nationwide. In Austria, draft legislation has been initiated to expand the all-day offerings in schools; Switzerland has begun to harmonise hours of instruction across regions.

Promote centres for families ('Zentren für Familien')

We recommend expanding day-care centres and schools into service centres for families. Studies have repeatedly shown that support of children outside the home is especially successful when it actively involves the parents. Such communal centres

for children and parents also make sense because they enable better coordination of parental and child needs and demands for flexibility, taking regional particularities into account in the process. Such an approach will broaden the actual task of day-care centres and schools and turn them into neighbourhood sources of support, education, supervision, and health promotion for children and parents.

Some German federal states have already begun to establish appropriate offerings (family centres and parent-child centres). Applicable approaches also exist in other European countries. Such service centres for families can integrate additional offerings (including music schools, sport clubs, therapists or offerings in family education and parental counselling). These benefit not only parents who combine paid work with care work, but also families that do not pursue any employment or live on a very low wage income. Centres could create offerings to structure the time, for example continuing education. These centres could also house on-call home help aides ('Familienhilfen') who would partner with families as independent agents. Such aides would have the advantage of being able to reach families as and where they are to show them the way to other offerings from these centres.

Enhance local family policy offerings

In all three countries, demographic developments are leading to a differentiation of the population. Urban regions are characterised by increasing ethnic and cultural diversity, whereas some rural regions are more strongly affected by population ageing because of migration out of these areas. One can only react appropriately to these demographic changes if, alongside the national family policy, the individual states and local communities also interpret the well-being of children and parents as a political goal that they share the responsibility for.

Such responsibility is also documented by drawing up family reports at the state, canton, and local community levels that include measures and information from the respective regional bodies and focus on the well-being of children and parents. Some federal states and local communities are already doing this in an exemplary manner; we recommend continuing this across the board in all three countries of our study.

The differentiation in living conditions in urban regions and in rural regions undergoing immigration and/or emigration also requires different strategies for supporting development in children and families. A new and innovative approach that has shown promise in recent years is the development of local social networks in which various professionally trained specialists work together with qualified

laypeople to support families in their children's development. The already available networks show that child and parental well-being can be positively influenced by civil-society involvement. Establishing such networks for families requires that the usually differentiated social services available in local communities develop a new form of cooperation, as is already being practised in certain German local communities.

Design cities and surroundings to be family-friendly

The creation of a family-friendly society not only requires the renovation and expansion of the childcare infrastructure; the spaces in which people live must also be designed to be family-friendly. City development must also be oriented towards the requirements and leisure interests of families and use these as a central planning criterion such that children can move around freely and independently of their parents in public spaces. Here it would be helpful if a 'family-friendly community audit' could be developed for local communities that was similar to that used for businesses.

In many cases, the spatial isolation of child-friendly environments can be overcome through simple city-planning measures, for example cycle paths that are well laid out and traffic routing that keeps children safe. Such adjustments to the city environment act as an everyday sign to people that parenthood can be an option in life for which allowances will be made. At the same time, parents will be relieved of the heavy burden in time and material that the frequent transport of their children represents. Environmental design of this sort that is appropriate for families also accommodates the mobility and safety needs of the older generation. Business and society must do more to adjust to the needs of families and generations, and not vice versa.

Introduce 'family mainstreaming'

We recommend broadening gender mainstreaming to extend to families. In order to guarantee the coherence of political measures affecting families and to strengthen the well-being of parents and children, we suggest verifying the effectiveness of all measures and political proposals. Both legislative proposals and public mandates should correspond to the principle of promoting the well-being of children and parents.

This is how to better coordinate the administration of measures relevant to the family. Family mainstreaming should not contradict or compete with measures to

promote gender equality or ethnic diversity, but rather should work together with such measures to guarantee stronger support of parental and child well-being.

2. RECOMMENDATIONS FOR MEDICINE AND HEALTH POLICY

Examining the legal situation of reproductive medicine

For the reasons that follow, we recommend a thorough review of the respective reproductive medicine legislation in all three countries of our study.

Protection of sperm donors: Because a child born from a sperm donation has the right under both the European Convention on Human Rights and the UN Convention on the Rights of the Child to know the identity of his or her biological parents, legal claims for both maintenance and inheritance can be brought against donors in Germany. We therefore advocate altering the maintenance- and inheritance-related sections of the German Civil Code (BGB) to protect the donor.

Elective single embryo transfer (eSET) and the 'rule of three': The Embryo Protection Act that has been law in Germany since 1991 does not make sufficient allowance for the further development of reproductive medicine. Procedures such as elective single embryo transfer (eSET) that are practised in Austria, Belgium, France, and Sweden are not allowed in Germany and Switzerland so as to avoid multiple pregnancies, which are associated with high health risks for mother and child. It has been shown in Sweden that the rate of pregnancy was not unfavourably affected after the transfer of only one selected embryo. We recommend allowing eSET in Germany and Switzerland under the same conditions.

In Germany, the 'rule of three' (the number of embryos developed may be no more than the number that are to be transferred to the woman, a maximum of three) is sometimes interpreted in practice in a manner that is contradictory to the unambiguous wording and aim of the regulation, and is no longer viewed as definitive law. We therefore recommend clarifying the validity of the 'rule of three' and applying legal regulations to the preservation of oocytes, pronuclear oocytes, and embryos, as well as the requirement for their destruction.

Equal access to ART (assisted reproductive technology) treatments: Because the European Convention on Human Rights gives couples the right to take advantage of the achievements in reproductive medicine to fulfil their desire to have a child, all couples (regardless of their financial means, in accordance with the principle

of equality) must have free, unrestricted access to fertility treatment. Under this premise, national insurance should therefore cover a greater portion of the cost of ART treatments.

Since it would also be desirable for the costs of ART treatment to be covered for women under 25 in cases of limited fecundity in men, as well as to introduce a flexible, individual age limit for older female fertility patients (against the previously fixed age limit of 40 years), we recommend a critical look at the current stipulation of purely numerical age limits. The higher age limit of 50 years for men should also be re-examined because of its lack of rationality.

Counselling in cases of severe genetic disease in families

Couples must be given detailed information and clarification when there is severe genetic disease in the family. This includes pre-implantation genetic diagnosis, which is now permitted in Germany, and the possibilities of prenatal diagnosis.

Strengthening of endocrinology and reproductive medicine departments at universities

We recommend anchoring the three pillars of women's health – gynaecology, obstetrics, and endocrinology/reproductive medicine – more strongly in universities in Germany, following the examples of Switzerland and Austria, in order to guarantee the quality of scientific research, instruction, and continuing education at an internationally comparable standard.

In addition, we recommend strengthening, promoting, and advancing the field of andrology as both a research area and a clinical specialisation in the three countries.

Screening for Chlamydia trachomatis infection and introduction of a reporting obligation

Since 2008, the screening of young women between the ages of 15 and 25 for Chlamydia trachomatis (CT) has been a standard benefit of the national health insurance in Germany. In order to structure this screening successfully, we recommend using public information campaigns to increase the knowledge both in the population (especially young people under 25) and among medical professionals about chlamydia infections. Because women are postponing their first pregnancy until later and later in life, we believe it makes sense to offer women free screening until age 30 and to include adolescent boys and men in chlamydia screening

in order to avoid mutual contagion (the ping-pong effect). We also advise carrying out an evaluation of the utility, acceptability, and economic viability of the screening.

Because testing for genital chlamydia infection in Germany was adopted into the maternity guidelines in 1995, we recommend evaluating these results systematically and regularly. We also recommend establishing screening for CT infection in Switzerland and Austria and adopting it as a part of prenatal care.

Following the Swiss model, we also recommend introducing a reporting obligation for CT in Germany and Austria in order to improve the available data and to learn the extent of the spread of CT in the population, especially among young people. Preventive measures can then be established that will be better targeted than they were previously.

Introduce screening for gestational diabetes

The early diagnosis of gestational diabetes, which occurs without symptoms, is of great importance. It occurs more frequently in women over 35 than in younger women and if left untreated can lead not only to negative perinatal results, but also to negative foetal programming. This means that there is a high risk of the child itself developing insulin resistance, excess weight and coronary heart disease later in life and passing on this condition to their own children.

It is also advisable, as a health-promoting and life-prolonging measure of primary prevention, to carry out general screening for gestational diabetes in Germany, as was established on 1 January 2010 in Austria as part of its 'mother- child pass' booklet and has been recommended in Switzerland.

3. EDUCATION ABOUT FERTILITY AND FECUNDITY AS WELL AS ABOUT THE DESIRE OVER THE LIFE COURSE TO HAVE CHILDREN

Education of children and adolescents

We recommend that the three countries in our comparison Germany, Austria and Switzerland complement the sex education in schools, which chiefly imparts basic biological knowledge, with competent, appreciative, and gentle instruction for children and young adults – with special consideration for children with migration backgrounds – about the complex changes in their bodies, the ability to father and

bear children, and the genesis of new life. Girls should understand the biological potential of their bodies to bear children; boys should likewise learn to appreciate their ability to father children. Sexuality should be seen more strongly in the context of fertility. Only young people who appreciate their bodies will be motivated to protect their fertility.

We recommend informing youth about preventive measures and explaining that these are of crucial importance for preserving unrestricted fecundity (fertility) and preventing unintended childlessness later in life. The topics of such counselling include living a healthy lifestyle and avoiding being over- or underweight, knowledge about the damaging effects of smoking and heavy drinking, the prevention of sexually transmitted diseases, and protecting oneself from environmental conditions that can damage fertility.

We also advise educating adolescents early about the age-related decreasing fertility in women after 35 years of age, and to a lesser extent in men after 40. In addition, we recommend that knowledge of contraceptive possibilities and how to use them be communicated in a competent manner in order to avoid unintended pregnancies.

We recommend the reworking, correction, and expansion of the instructional content in biology books on the physiology of the menstrual cycle and on contraceptive measures, as well as the adaptation of sex-education lesson plans to the acceleration (earlier onset) of menarche.

In addition to sexual education in schools, we recommend promoting and supporting model projects in order to reach more young people, such as those developed in Germany by the Medical Association for the Promotion of Women's Health (AGGF) – www.aeggf.de – or the MFM project – www.mfm-projekt.de – which was recognised by the EU as a best-practice project for the prevention of sexually transmitted diseases. These projects are exemplary models for teaching prevention in sex education, and they also reach target groups who can especially benefit from such counselling, such as young migrant women.

We explicitly recommend that boys be educated in this subject by men (doctors, subject experts with pedagogical training, or teachers). We recommend the German 'girls' consultations' in gynaecologist's offices for Austria and Switzerland as well.

Education of women, men, and couples who want to have children

For women, men, and couples who want children and who visit a medical practitioner (gynaecologist, andrologist, urologist or GP), we recommend advising them on how they can use preventive measures to preserve their fecundity and protect the health of their (future) child.

Surveys show that there is inadequate knowledge in the total population about the age-related decrease in fertility that occurs in women (after about 35) and men (after about 40), as well as about the possible medical risks for mother and child that result from postponing the first birth until later in life. We therefore recommend giving comprehensive information on the subject. The access, selection, and use of safe contraceptive measures should also be an element of this education in order to avoid unwanted pregnancies and the resulting abortions. Public campaigns in digital and mass media offer additional possibilities for education, as do brochures for doctors' surgeries, action days, and apps for mobile phones. This way couples can reach an 'informed' decision about whether and when to plan children into their life course and how many.

Counselling for women, men, and couples who want to have children

If women do not become pregnant within two years (one year for older women), there should be a systematic investigation of the cause of the infertility in order to estimate the chances of a naturally conceived pregnancy within the near future. If the couple remains childless after exhausting all conservative treatment methods, we recommend comprehensive counselling about the possibilities of assisted reproductive technology (ART) as well as about alternatives such as adoption. Should a couple decide to undergo ART treatment, we advise their immediate transfer to a centre for reproductive medicine so that no further time is lost.

Because an increasing number of couples consider ART, we recommend educating them that as fertility decreases with age, the chance of becoming pregnant and bearing a living child is only slightly higher using ART than by conceiving naturally. Couples should also be informed, however, that the majority of pregnancies in couples where the woman is older than 35 and the man is older than 40 proceed without complications and lead to the birth of a healthy child.

Counselling and information for women, men, or couples should not bewilder them. It is therefore advisable to declare the risks in absolute numbers, since talk of risks in comparison to younger age groups (relative risks) is confusing and misleading for patients without medical training.

Counselling and prevention for pregnant women

All pregnant women should receive comprehensive counselling on how they can adapt their lifestyle (healthy diet, no smoking or drinking, sufficient movement, avoiding extreme stress, getting enough sleep and rest, taking folate supplements) to help them experience pregnancy and birth without complications.

Because women over 35 are more likely to suffer from pre-existing internal diseases such as clinically manifest diabetes or chronic high blood pressure, there can be complications for mother and child. Gynaecologists should therefore advise patients to take advantage of all preventive examinations early and regularly. When risks are detected and monitored in a timely manner, pregnancies in older women differ little from those in younger women.

Education and counselling before treatment with assisted reproductive technology (ART)

We recommend educating couples extensively before ART treatment about the chances and possible risks to mother and child. In particular, doctors should point out the heightened adverse health effects of a twin pregnancy, including later psychosocial strain, especially since the German IVF register shows that the rate of twin births after ART was 20.8 per cent in 2009, meaning that every third child was a twin (32.3 per cent).

Because the public and many infertile couples greatly overestimate the chance of bearing a living child through ART, it is essential to inform them of the rate of living births per embryo transfer. At the moment this is an average of 18 to 20 per cent and significantly depends on the age of the woman, the number of embryos transferred, and the technology of ART used. Since the physical and emotional burden of fertility treatment is frequently underestimated, we advise timely consideration of these aspects and special supervision where applicable.

4. RESEARCH RECOMMENDATIONS**Research on the desire to have children and its realisation**

There continues to be a need for research into the subject of women's, men's, and couple's desires to have children. The discrepancy between the number of children planned and the number realised (the 'fertility gap') is a central theme in the political debate.

The estimates of this discrepancy differ depending on when (in the life course) and how the planned and realised number of children is measured. We recommend measuring the fertility gap by means of panel studies that ask fertility-related questions periodically, usually every three years. This provides a basis for research into whether women and men realise their desires to have children, which underlying conditions facilitate or complicate such realisation, or whether changes in those underlying conditions lead to changes in the desire to have children.

Study the effects and the transformation of family and fertility models and social norms

Family and fertility models and norms have a strong influence on fertility decisions. They raise numerous questions that have not yet been sufficiently studied, such as: By what means, under what conditions, and how quickly do such models and norms change? How does their transformation take place across different social groups? How do they change over the life course? Are there differences by gender and by sociocultural origin? What relationship do the different norms have to one another? Are there normative links between the rise in women's employment and the increase in men's work in the home and family? Which models and norms undergo transformations, and which remain stable? How much are they still obligatory, in view of the loss in the significance of traditions and the advancing process of individualisation? To what extent do models and norms define the scope of family policy and, conversely, how much does family policy influence them? Does transferring family policy instruments from one national context to another restrict their impact?

All of these questions demand careful research. It is especially important that there will be stronger consideration of these issues in the large representative surveys focusing on various topics than there has been previously. This will not only lead to a better understanding of the fertility decisions of women and men and of regional and social differences in fertility, but it will also enable a more sensible design and outlook in family policy.

Learn to better understand couple dynamics in fertility decisions

The decision to have or not have a child is not the result of stable interests and attitudes in both partners. Fertility decisions are complex processes in which each partner influences the other, meaning that in some areas over the course of the partnership both common interests and a common way of seeing things can develop. This couple dynamic in fertility decisions has so far been researched only in

parts. What rules govern how these decision processes proceed? To what extent can differences be bridged? How strong is a man's or woman's influence on his or her partner? Couple dynamics in fertility decisions should be studied both with qualitative case studies of a manageable number of couples and with quantitative analyses of representative datasets such as the German Family Panel ('pairfam').

Study childlessness and the postponement of births

The age-specific changes in generative behaviour demand more analyses of the social, economic, cultural, and political influence factors in order to explain the reasons for postponing the birth of a first child. This is another area in which too little attention has been given in the past to the fact that fertility decisions are couples' decisions.

Childlessness and the decrease in multi-child families are the central processes that have led to the decline in fertility. Interdisciplinary research into the causes of intended and unintended childlessness must focus on underlying (political and economic) conditions, subjective attitudes, changes in mobility behaviour and couple dynamics, as well as on biological aspects such as infecundity. The objective is to analyse sociodemographic determinants of childlessness within the context of partnerships.

Carry out representative studies on sexual behaviour

Sexuality is an important component of partnerships and a prerequisite for fertility. Despite the fundamental importance of the subject, there have so far been no larger representative studies of sexual behaviour in Germany, Austria, and Switzerland that include questions on contraceptive methods or medical measures to fulfil the desire to have children alongside questions on intercourse and other forms of sexual expression. This knowledge gap in comparison to the United States, Sweden, France and the United Kingdom should be bridged.

Because of their object of research, representative studies on sexual behaviour bring about special methodological problems (for example social desirability). It is precisely in this context that the question of appropriate collection methods is important. The measuring accuracy of collection instruments used in the past must be increased, and new measuring procedures and possibilities for combining them (triangulation) must be developed. Biological information is of great interest in addition to the psychological, social science, and medical information, in order to be able to pursue the interaction of biological, behavioural, and environmental

influences on fertility. Clarifying the data protection questions involved and solving the collection problems should be part of these new research efforts into sexual behaviour. The design of such studies should enable cohort comparisons, for example in order to test how the liberation in sexual behaviour that started in the 1960s has taken place.

Prospective studies on developments in fecundity

In order to be able to answer with certainty the question of how and whether fecundity has changed in the population over the course of time and to clear up uncertainties and speculation, prospective control studies must be carried out in which the various causes of infertility in couples are studied in representative population groups over a longer time period comprising several generations.

Public health research within the context of reproductive medicine

We recommend supporting public health research proposals into the causes and therapies for diseases that influence reproduction (e.g. endometriosis or polycystic ovarian syndrome) as well as further progress in contraceptive methods for men and women. What is more, we recommend planning and carrying out prospective studies that register biodata and biomarkers to recognise the prediction and valency of parameters of reproduction, beginning in pregnancy during the prenatal phase.

Improve evaluation research on the influence of family policy on fertility

There is still a great research need for studies of the overall impact that individual family policy measures and family policy have on fertility. We recommend researching the impact mechanisms that affect various groups of parents, within various structural contexts. There has likewise been little previous knowledge about the interactions of various family policy measures and of their interactions with other policy measures. There is also a need for research as regards the acceptability of family policy measures for fertility decisions. We recommend combining various methodological approaches systematically, such as macroanalytical comparisons across countries, regional comparisons, and microanalytical evaluation studies from a comparative perspective. For international comparisons, we recommend pursuing both research designs with many countries and designs with fewer countries and the corresponding depth of focus.

Establish evaluation research on the influence of family policy on child and parental well-being

Systematic and scientifically sound evaluation studies on the association between family policy and child and parental well-being is necessary for evidence-based policy advising. There must be further development of evaluation studies at both the micro and macro levels, as well as the combination of both approaches. Such research can be financed by various actors (ranging from national research sponsors to the relevant ministries). The research should be scientifically based in all cases, and the results should be widely discussed. This is the only way to ensure an effective basis for policy consultation.

We advocate systematic, broad, and sustainable accompanying research to evaluate all family policy measures – those of the past and those newly introduced – according to their goals. Policy measures should also be empirically tested for their interaction on the effects of various dimensions of child and parental well-being. Comparisons between countries and regions also make sense in this context.

5. RECOMMENDATIONS FOR DATA COLLECTION

Make register and census data in line with international standards available

A reform of Germany's law on population statistics is pending. For reasons of data protection, they are considering the possibility of discontinuing the collection of exact birth dates of parents and children in future and not forwarding these to the statistics authorities. Without this information, however, the mother's age in completed years at the birth of the child cannot be calculated. This is why we recommend collecting the exact date of birth and forwarding this information to the authorities; it is the only way to guarantee the international comparability of the German data.

Future censuses will be conducted based largely on registers. Efforts should be taken to make this information available to the scientific community as anonymised individual data. Generally speaking, we should exhaust the potential for making register data available for scientific analysis in an anonymised form, even as we should also discuss the possibilities for linking different register data.

The Nordic countries set the precedent here, allowing biographical data on education, family, occupation, etc. to be linked. This enables analysis of fertility

behaviour throughout the life course based on register data. Austria already has plans to establish a central civil register. In Germany and Switzerland, current legal regulations on data protection mean that changes to the law are not yet in sight.

Improve the measurement of fertility

The increased use of fertility indicators that differentiate fertility trends by birth order should expand the use of measuring concepts that go beyond the total fertility rate (TFR). Such fertility indicators are necessary to depict the distribution of the number of children per woman/per man in a society in order to declare how many women/men have no children and how many have one, two, or more. These indicators also open up the possibility of analysing birth decisions from the life-course perspective and studying the timing of births. Fertility trends by birth sequence also play a role in forecasting future developments in fertility, since they allow for more exact prognoses.

Cohort-based fertility indicators, in contrast to period-specific fertility indicators, represent reliable measures of fertility because they are not distorted by timing effects (changes in childbearing age). We therefore recommend that statistics authorities provide cohort data with the same visibility that is guaranteed for period-specific fertility indicators at present. Fertility data for men should also be made available.

Data for multi-level analyses

A better understanding of the fertility development in a country (macro level) requires an analysis of the patterns of behaviour at the individual and household level (micro level) and their embeddedness in regional and local structures (meso level) that create the underlying structural and institutional conditions (labour market, childcare, etc.). The purpose is to identify underlying cultural, social, and economic conditions that characterise the specific regions and offer a possible explanation for the regional fertility level and its development.

We therefore recommend using this type of multi-level approach (macro-meso-micro level) to explain fertility behaviour. This requires the establishment of appropriate datasets that combine information at the individual level with information at the regional and macro levels. The regionalisation of already available data would be a first step. Ideally evaluation studies should take into account the geographic mobility of households and the embeddedness of the decision level in social networks.

Differentiate fertility data by migration background

The subject of fertility and migration cannot be adequately studied at present because of insufficient data. The official indices of migrant fertility in Germany and Switzerland have only limited significance, since birth statistics collect only the country of citizenship (of the father, mother, and child) and not the country of birth. But citizenship alone gives only partial information about a migration background. We recommend including the country of birth and the date of immigration in birth statistics. This would also facilitate the comparison of birth statistics results to microcensus data.

Recommendations for the German microcensus

In Germany, the microcensus continues to represent the most important source of reliable structural data in the fertility field. We recommend the following changes in this area: (a) The birth year of the children should be recorded. This will allow for age-specific birth rates to be calculated. In addition, better fertility indicators for migrants could be generated if one drew on information on the date of migration and the country of birth. (b) Questions on children should also be posed to the men surveyed. (c) In Germany in particular there were frequent refusals to answer questions (asked in 2008) about the birth of the child. We recommend annual collection of the number of live born children and integrating the question into the survey form better and not putting it at the end as was done in the past. What is more, the question on the number of children should be part of the obligatory programme of questions, similar to other questions in the microcensus.

Further, future collections of German data should not do without the east-west differentiation, since separate analyses provide information on the persistence of the differences or convergence in fertility and families patterns.

Expand panel studies and establish them in a sustainable manner

Repeated surveys of the same respondents (panel studies) are necessary in order to analyse the determinants of the desire to have children and of reproductive behaviour at the individual level over the life course and especially to diagnose changes in attitude and behaviour. We recommend panel studies that combine the continuous collection of fertility ideals and intentions with questionnaires on the educational, occupational, partnership, and migration biography. The long-term, sustainable financing of these panel studies must be guaranteed.

The corresponding preconditions have been created in Germany through panel studies such as the German Family Panel (pairfam) and the German Socio-Economic Panel (SOEP), and in Switzerland through the Swiss Household Panel (SHP), even if the panels have only limited international comparability with respect to fertility. There is no current family survey for Switzerland, but a cross-sectional survey on families and generations is planned for 2013. A decision will be taken in 2012 about whether to carry out a panel survey among some of the respondents. The data available in Austria, by contrast, is insufficient in this area: the family surveys here exhibit a relatively small sample size, and the age-range of respondents is severely restricted. Large-scale panel studies are also lacking. We therefore recommend establishing internationally comparable panel studies here as well. A second survey wave has been secured for the follow-up testing on the Generations and Gender Programme (GGP), but the financing conditions for additional survey waves have not been clarified for the long term. We recommend ensuring the long-term financial support of the GGP, since at the moment it represents the only internationally comparable panel survey of fertility and family behaviour. An expansion of the data infrastructure is also essential for scientific evaluation studies.

Panel studies are an appropriate means to deepen the understanding of the causes of fertility behaviour. This could be useful in studies on the effects of changed conditions in family policy and would require further methodological advances on the one hand and qualitatively higher value data on the other. The future prospects for covering a wide spectrum of fertility and family research are in European and internationally comparable survey data at the micro level that can be linked to macro data. A example of this is the GGP contextual database that is currently being set up.

Include information on sexual behaviour and contraception in standard surveys

It is important to include additional information on sexual behaviour, contraceptive methods, and fertility measures taken (ART) in voluntary surveys. Some surveys already collect such data. This is relevant for fertility research because it allows aspects such as unintended pregnancy, length of time until onset of pregnancy, and infertility to be analysed.

Support qualitative studies

We recommend the use of qualitative studies in fertility research in order to broaden the understanding of reproductive decisions taken by individuals and couples.

Qualitative data can enable the study of sensitive subjects such as infertility, a conscious decision in favour of childlessness or very late parenthood, or intimate aspects of sexual behaviour or contraception. We recommend expanding research support for the costly collection of qualitative data. The collection of qualitative data in a longitudinal design is optimal because it allows the target individuals to be incorporated into representative surveys.

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The current debates on the demographic transformation have been characterised on the one hand by declining birth rates and on the other by increasing life expectancy. Such debates usually focus on the consequences for society, which are frequently described in dark terms. In this booklet, by contrast, you will find analyses and suggestions on how to improve the situation of children and parents to make it easier to realise the desire to have children.