

DEBATE

Delayed reproduction: A small step in the right direction

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ABSTRACT The predicted global population increase, despite declining fertility rates in many countries, poses a serious threat by adding to overpopulation, resource depletion and climate change. This paper supports trends that contribute both to ethically valuable goals such as justice and autonomy, and to reduced fertility rates. The primary focus is on universal women's education as the means to promote both reproductive autonomy and climate mitigation. Delayed reproduction is one consequence of increased women's education and should also be welcomed. In order to effectively promote reproductive autonomy, it is essential to challenge the widespread pronatalist ideology. This pervasive ideology influences reproductive intentions and undermines autonomy. Delayed parenthood should not be framed as a restriction, but rather as an empowering consequence of greater educational and economic opportunities for women. Ultimately, supporting social trends like delayed fertility can align ethical, environmental and demographic goals without infringing on personal freedom.

KEYWORDS Climate change • Delayed reproduction • Overpopulation • Reproductive autonomy • Women's education

Introduction

The predicted growth of the global population will result in overpopulation, which is likely to have disastrous consequences for future generations. Despite declining fertility rates in many countries, the United Nations estimates that the global population will exceed 10 billion by 2080, a 25% increase on current numbers (United Nations, 2024). This will cause serious difficulties, including food production shortfalls, water scarcity and depletion of resources (Hickey et al., 2016). Moreover, overpopulation is the primary driver of climate change, which will exacerbate these challenges (Bajaj and Stade, 2023). Papers that focus on low fertility rates seem to ignore both overpopulation and climate change. They focus solely on the direct economic and social consequences of low fertility rates, such as an ageing workforce, a reversed population pyramid, unsustainable welfare systems and lower economic growth. While these consequences will undoubtedly be serious, they will pale in comparison to those associated with a rapid increase in the global population. Countries with low fertility rates should start preparing for the demographic changes now by introducing measures such as raising the retirement age and allowing more

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controlled immigration. Contrary to the position defended in many papers on declining fertility rates, below replacement fertility rates should be welcomed.

The relationship between population size and climate change is complex due to many interacting variables. Focusing on population reduction has its own biases and difficulties. At first sight, it seems as though poor countries with high fertility rates are being blamed for future problems (Muttarak, 2024). However, this ignores the fact that rich countries emit much higher levels of greenhouse gases per capita than poor countries due to their consumption and lifestyle patterns. Nevertheless, it is crucial for low-income countries to also strive to reduce their fertility rates, first because they are likely to be disproportionately affected by climate change, and second because they are likely to become polluters themselves when they become wealthier. At present, there is a lack of action to reduce the consumption of highly polluting goods and services largely due to the unchallenged dogma of economic growth. Overconsumption probably contributes as much to climate change as overpopulation.

Individual rights versus societal interests

Population management is a delicate ethical issue. People in high-income countries have come to believe that reproductive autonomy is a near-absolute right, leading to strong resistance to any perceived interference into personal reproductive choices. However, there are no absolute rights. Ethics is a matter of balancing the rights and interests of the parties involved. Restrictions or violations of the right to reproductive autonomy can be justified when, for instance, unrestricted reproductive autonomy would result in catastrophic situations harming many people's fundamental interests. Different levels of infringement can be distinguished, ranging from providing reasons for individuals to change their reproductive plans to the use of downright force.

This article argues in favour of supporting trends and developments that contribute to the decline in fertility. Fertility delay is one such trend. Delayed reproduction is largely a consequence of women's increased education and of life circumstances that lower the risk of having a child in early adulthood (e.g., not having a partner or being unemployed). Beaujouan (2023) identifies two main mechanisms indicating that delayed fertility is an important driver of fertility decline. First, there is age-related fertility decline, i.e., a shorter reproductive lifespan. Second, there is long-term investment in other life plans that leads individuals to reconsider their initial fertility intentions or forego childbearing. In addition, universal education of women is the most powerful driver of fertility decline (Lutz, 2023). However, fertility rates can be reduced in many ways, some of which may be considered unethical, objectionable or harmful. We argue that societal trends and developments should contribute not only to fertility decline, but also to ethically valuable goals such as justice and autonomy (Pachauri, 2024). Other authors have also emphasised the importance of women's rights when selecting measures to combat climate change (Temmerman et al., 2025). It is a win-win situation: women's education contributes to women's equality and empowerment and simultaneously reduces population growth and mitigates climate change.

In its recent report, the United Nations Population Fund (2025) defended the claim that a lack of reproductive agency, rather than population size, is the main problem. While I disagree with the dismissal of overpopulation as the main problem, I agree that the promotion of reproductive autonomy for all may constitute a significant component of the solution. In many instances, these two goals will directly overlap. For example, providing universal access to contraception promotes both fertility reduction and reproductive autonomy. In other instances, such as that of the universal education of women, the connection is less tight. In this line of reasoning, women's education is considered an antinatalist policy, and could therefore be viewed as a serious violation of reproductive autonomy, similar to pronatalist policies. However, this conclusion is incorrect as education empowers women and increases their autonomy, including their reproductive autonomy. Many pronatalist measures can be condemned because they both contribute to population growth and frequently impede women's rights, for instance by lowering female participation in the labour market and restricting educational opportunities. Nevertheless, it is important to realise that this is neither a neutral position nor a universally shared view. People with radically different worldviews, such as fundamentalist religious groups, may oppose gender equality and women's education.

Delaying fertility as a mechanism to lower fertility rates has several advantages. First, it currently mainly occurs in high-income countries. Since the carbon footprint of a person in a high-income country is multiple times higher than that of a person in a low-income country, more climate damage will be prevented when people in high-income countries have fewer children (Nielsen et al., 2024). Second, it also appears to mainly affect the decision to have a second or subsequent child (Kohler and Ortega, 2002). It does not prevent women from having a child, but it limits the number of children they will have, which is precisely what is needed to prevent overpopulation. Changing social norms around family size turns out to be crucial to accelerating fertility decline (de Silva and Tenreyro, 2020). This effect nicely coincides with the growing ethical conviction that the contribution of reproduction to climate change is a good reason to restrict the right to procreate to having one child (Conly, 2005). In other words, the right to start a family would no longer mean that people can have as many children as they want, but rather that they can have one child, or at most two children.

Some people may consider measures aimed at reducing the number of people wanting to have a child or at lowering the number of children couples want to be a form of psychological manipulation and a violation of people's freedom. However, this position seems highly difficult to defend unless these people equally object to the strong pronatalist messages and measures currently imposed on citizens by many countries. While these measures aimed at inducing people to have more children usually avoid outright coercion, they may be considered borderline in terms of respect for people's autonomy. Offering people substantial tax benefits or a year of paid parental leave could be seen as an undue inducement. Such benefits may encourage people to have a child when they would otherwise not have done so. It is striking that the question of coercion is rarely raised when pronatalist measures are proposed. Some pronatalist incentives may be considered as borderline coercive in the sense that some people may not feel free to ignore such inducements. If such actions are accepted, then similar actions

in the opposite direction should also be accepted. The justification lies in the general good of society. Society is constantly taking action to adjust our preferences and modify our behaviour (such as encouraging us to eat healthy food), but these actions do not violate our right to self-determination. A similar line of reasoning applies to reducing fertility.

Reproductive autonomy

One could argue that delayed parenthood leads to diminished reproductive autonomy as people who postpone childbearing may be unable to have the number of children they want. People who start building a family at a later age have a higher chance of having fewer children than they had originally or ideally planned. The following citation illustrates this point: ‘These findings indicate a discrepancy between couples’ fertility ideals and their reality, suggesting that external forces may be driving them in the direction of delaying childbirth and thus that advanced maternal age (hereafter AMA) may not be entirely a matter of personal preference’ (Lemoine and Ravitsky, 2015, p. 38). These authors conclude that society should reduce the barriers for women who want to establish a family. Measures aimed at helping people raise their children, such as financial aid, childcare provision and work-private life balance policies, may indeed help parents, but care should be taken to not introduce measures that would also encourage people to have children. Moreover, some of the factors explaining the discrepancy between fertility desires and fertility intentions should not be subject to government intervention. For instance, some older women may initially want to have a child (or a second child), but then change their minds because they lack a (suitable) partner. It is difficult to see how society could remedy this situation. Not having a partner before the age of 30, or not having a suitable partner with whom one wants to have a child, contributes to delayed childbirth and lower fertility. Research has shown that the primary reason why women freeze their eggs is the lack of a partner (Pennings, 2021). The lack of a suitable partner is frequently a consequence of the reversed educational gap, whereby more women than men have tertiary academic degrees. This trend, together with the general mating rule that women should marry up, leads to a shortage of suitable men for highly educated women. The factors contributing to the delayed reproduction of women are largely the same factors that contribute to women’s emancipation and empowerment: continued education, economic independence and equal access to the labour market (Pennings, 2021). Strengthening these elements indirectly enables women to develop and pursue other goals in life that may be more fulfilling than parenthood. For decades, most high-income countries have been taking active measures to help women achieve such goals. It would be unacceptable to argue that we should turn back the clock on women’s emancipation and gender equality now. Society should not encourage delayed parenthood as such, but should promote the emancipatory measures that would directly or indirectly cause a delay. These measures would also contribute to eradicating the pronatalist ideology, as both men and women would realise that a life free of children can be equally worthwhile and satisfying.

Pronatalism and fertility intentions

The assumption that most people want to have children is often the starting point in the debate on reproductive decision-making. However, this is highly misleading if the intention is to defend reproductive autonomy. The pronatalist ideology exerts strong pressure on people in every society to want and to have children (Purdy, 2019). Having a child is presented as desirable and as contributing to a person's life satisfaction. In other words, the current desire of many people to have a child is not an autonomous desire. To really promote reproductive autonomy, we must first eradicate the pronatalist ideology in order to determine how many people would then want to have a child. Although the normative pressure to have a child may be diminishing, it remains very strong, particularly in low-income countries. By fighting pronatalism, we would reduce the number of people with a society-induced desire to become a parent. This fight would also have a very positive effect on people who happen to be infertile. The inability to have a child would then be less devastating and less harmful to people's self-esteem. In addition, the pronatalist ideology leads to the view that becoming a parent is essential to living a meaningful and fulfilling life. However, most cross-sectional and longitudinal studies suggest that, on average, parents report lower levels of happiness, life satisfaction and overall well-being compared to non-parents (Hansen, 2012). Parenthood is frequently linked to reduced relationship satisfaction, higher rates of depression and greater financial strain (Pollmann-Schult, 2014). A recent systematic review further confirmed a positive correlation between being childfree and higher life satisfaction (Stahnke et al., 2023). In general, having children tends to either reduce happiness or, at best, leave it unchanged compared to not having children. This indicates that many people may be misinformed about the actual impact of parenthood on personal well-being.

Realising one's fertility intentions

The difference between the number of children a person wants and the number that they eventually have should not be considered an unmet need (Smallwood and Jefferies, 2003). This disparity may be due to the uncertainty surrounding people's fertility intentions, as well as to the almost inevitable changes they make to adapt their plans to their life circumstances. The concept of an unmet need is based on the assumption that people have a relatively stable idea about family size at the outset of their adult life. However, studies have shown that these long-term family size ideals are considerably less fixed than suggested (Beaujouan, 2023). If young people lack a clear idea of their desired or ideal family, they may simply change their plans along the way. Having fewer children does not necessarily indicate that their reproductive autonomy is hampered. People may express a desire to have a certain number of children and change their minds when, for instance, their first child turns out to demand much more energy than they originally anticipated. The initial idea of the ideal family may simply be based on ignorance about what parenthood implies. More often than not, the average intended family size is revised downwards due to societal changes (e.g., concerns about climate change) and/or personal factors such as the experience of

childbearing and parenthood. Still, while the discrepancy between fertility intentions and behaviours cannot be interpreted as an unmet desire for children, fertility intentions over a relatively short period of five years are a fairly reliable indication of what people want. Research suggests that the desire to have a(nother) child has risen among highly educated women who either have no children or had one child at a late age (i.e., at age 40 or older). These women will be confronted with age-related fertility decline and many of them will be unable to fulfil their wish, even when they have access to medically assisted reproduction (Beaujouan and Sobotka, 2022). Nevertheless, if older women are given access to medically assisted reproduction to have one child, the infringement of reproductive autonomy that can result from age-related infertility is largely negated.

Delayed parenthood and parental regret

Delayed parenthood implies that an increasing number of people will require medical assistance to reproduce when they age. This carries its own costs and risks for both women and children. Consequently, it could be argued that women should preferentially have their children in their twenties. However, medical considerations are just one factor among many that influence reproductive decisions, and there is no obvious reason why they should carry more weight than other factors. While the unfulfilled parental desires of older women are regrettable, they do not imply that delayed reproduction has an overall negative balance. Older women who are better off financially tend to have greater autonomy. They often possess greater agentic skills, such as introspective, communicative and volitional skills, which enable them to discover and express their own values and goals (Meyers, 2001). They are less likely to regret motherhood or to be pressured into unwanted motherhood. They are better able to resist the pronatalist pressure because they also have alternative life plans, which are less evident among poorer and less educated women. Women in particular experience constant pressure from society and significant others to reproduce (Ashburn-Nardo, 2017). Society tends to focus on women who regret not having had a(nother) child, but rarely on those who regret having had a child. Depending on the country, this group is relatively large. Studies conducted in several countries have shown that between 5% and 14% of parents regret their decision to become a parent (Piotrowski, 2023). Various background factors, such as being young, being a single parent and being relatively poor, have been associated with parental regret (Haruyama and Wakashima, 2025). The pervasive pronatalist ideology in most societies largely explains why women decide to become mothers even when they do not really want to (Johnson and Petursdottir, 2024).

Conclusion

Delayed reproduction reduces fertility rates and thus contributes to preventing overpopulation and climate change. Like continued female education, it should be welcomed as a modest step towards reducing fertility rates without the need for coercive measures.

People who choose to have children later in life are more likely to do so for well-considered reasons and are less susceptible to pronatalist pressure. As such, delayed parenthood is an expression of greater autonomy, primarily for women, and it promotes reproductive autonomy.

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