



**CHARLES UNIVERSITY**  
**FACULTY OF SOCIAL SCIENCES**

Institute of Political Studies

**Bachelor's Thesis**

**2022**

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**Considering Procreation: Arguments from  
Philosophy and Economics**

*Bachelor's Thesis*

Prague 2022

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**Academic Year:** 2021/2022

## Acknowledgements

I would like to thank Janusz Salamon for his interest in my thesis and for his feedback and help with everything. I would furthermore like to thank Vladimír Benáček for his valuable feedback. Thanks to my family and to my girlfriend Janine for the time they took to discuss with me, hear about my thoughts on this topic, and for giving me feedback on the final draft of my thesis. Lastly, thanks to Constantin and Nora for discussing various points with me.

## Abstract

The thesis investigates economic implications of procreation and on their basis offers a philosophical argument that sets strict conditions for procreation in the Global North. Firstly, a microeconomic theorization of procreative decision-making is linked to further microeconomic implications of procreation to offer a microeconomic analysis of procreation. Secondly, negative macroeconomic implications of below-replacement fertility in countries in the Global North are presented. Thirdly, it is shown that economic justifications alone do not provide sufficient justification for procreative intentions. Moreover, by utilizing the concept of carbon impact, a precept to limit one's family size on environmental grounds is stated. This precept is used to establish a novel concept of global justification for procreation. An argument from harm is used to argue for a concept of local justification for procreation. Lastly, an account of valid local and global justifications is given. By doing so, this thesis provides a strong moral argument against procreation in the Global North if the criteria of local and global justification laid out in the thesis are not met.

**Range of thesis: 80.602 characters**

## Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague, **21.04.2022**

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**Institute of Political Studies**  
**Bachelor's Thesis Proposal**

The discussion on procreation is concerned with the broad concept of whether bringing children into the world is laudable/advisable/essential/necessary or not. The Bachelor's Thesis seeks to evaluate different aspects of procreation in an unbiased, scientific environment. By factoring in and interweaving different scientific disciplines – philosophical (ethical and environmental) and economic (macroeconomic factors such as GDP growth, microeconomic factors such as individual happiness or old-age provision) – the research covers grounds that are currently untrodden. The Thesis aspires to be a starting point for further research, a guideline for decision-making and an overview over the current status quo of philosophical and economic research on the topic of procreation. The research question “*Factoring in philosophical and economic arguments, should people living in the first world procreate?*“ aims at filling a gap in current research: The multidisciplinary view on procreation. The answer to the research question aims to help young people to make up their mind about procreation, to read into the sources and to come to their own conclusions and will maybe even motivate them to conduct their own research to further the scientific discussion of the topic. A caveat is the inherent theoretical character of the Thesis as procreation is necessary for survival of humankind and, if seen from the standpoint of a first-world country, necessary for the survival of society. Therefore, goal of the Thesis is not to stipulate anyone in their procreative thoughts, but rather to spark discussion, further reading and research.

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# 1. Introduction and Methodology

## 1.1. Introduction

For many couples, the desire to have children is the logical consequence resulting from a long-term relationship and not rarely seen as the ‘logical next step’ in life. Having children can be fulfilling and becoming parents has possibly been a wish for the couple ever since they themselves were children. Children allow us to pass on values and norms, and being a parent means being witness to the start of a completely new life and the following advancements of this new human being: The first steps, the first words, the first day in school, the ups and downs of the teenage years, a first job, and ultimately the growing into an independent person who can be met at eye level. Possible reasons in favour of having children are multifarious. This does not mean that the decision to have children is always easily made. For example, children require lots of parental effort for at least the 18 years until the child is legally considered to be of full age and mature enough to take care of him- or herself. While this aspect of parenthood has been largely unchanged for the past decades, a constraining factor that has kept couples in the Global North from procreating has emerged over time: The economic cost of children (Stiftung für Zukunftsfragen, 2016; Ette & Ruckdeschel, 2006; Miller, 2018). Procreation does not start with conception and end when a child is born: Parents have to rear their children which leads to actual cost for necessities such as diapers, food, clothing, transportation, day care, education, as well as opportunity cost if the parents decide to work less while they rear their children. There are also parents who think about their countries’ workforce or pension systems, taking such considerations into account as well. The economic aspect of procreation cannot be denied, which is reason enough to further research what economic implications are brought about by procreation.



But procreation ought not to be seen as an isolated act, only concerning the prospective parents, their wish for a child, and their considerations that may or may not lead to them deciding to become parents: Procreation *causes another individual to exist*, and this human being will live a life – a good or bad one – which will affect others in both positive and negative ways. Procreation has consequences for the parents, their families, the child, and not lastly for everyone and everything that is or will ever be affected by any act performed by the future child. Such an act has moral significance, a decision as grave and with as many consequences as procreation should not be taken lightly and is thus subject to philosophical contemplation. This duality of *philosophy and economics* in procreation is the heart of this thesis and will be the object of investigation. To be more specific, this thesis will elaborate on economic and philosophical implications of procreation in the Global North. The statement that is defended here will be the following: *Procreation in countries of the Global North must be extensively justified locally and globally in order to be morally defensible.*

The goals of this thesis are the following: In the microeconomic part, the goal is theorizing and presenting the procreative decision basis of a microeconomic household. Other microeconomic implications of procreation, namely *cost*, *old-age provision*, and *happiness* are shown to give an account of practical implications of procreation in microeconomy. In the macroeconomic part, the aim is a discussion of the implications of low fertility rates. The philosophical part seeks to present a novel argument on the permissibility of procreation, which allows procreation under certain circumstances. In total, the goal of this thesis is to offer a valuable and valid argumentation about the permissibility of procreation, to show economic implications of procreation, and to argue that economic implications or justification based solely on economic factors is not sufficient. Currently, most philosophical thinkers are either entirely anti-natalist or cautiously pro-natalist (see Benatar and Wasserman (2015) for an example of the debate between the two factions). This thesis is a novel addition to the discussion in two ways: It is the first to consider procreation from a strict *Philosophy and Economics*

perspective. Secondly, this thesis offers an argument about the significance of *justifiability* of procreation. The novel element here are the concepts of *local* and *global* justification, which are used to assess different possible justifications for procreation. These concepts are used to give strict guidelines on the intentions, requirements, and reasons that parents ought to have if they want to engage in morally sound procreation. Thus, this thesis is neither pro- nor anti-natalist, but rather a middle-ground by allowing procreation under strict conditions.

A few clarifications are in order. Procreation in this thesis is seen as the deliberate, voluntary act of having a child, thus ‘accidents’ in sexual intercourse or procreation out of any sort of necessity are not to be considered here. Furthermore, discussion is limited to prospective parents in countries of the Global North, as these countries are characterized by an adequate societal framework to allow for such a narrow definition of procreation. Lastly, it is important to mention that this thesis is concerned with *economic implications of fertility*, and with the possibility of these implications being a sufficient justification for procreation. While a discussion of the exact *reasons* why countries with higher economic output have lower fertilities would be fruitful and highly interesting, such a discussion would be of sociological nature and worthy of more space than available in this thesis.

The thesis will proceed as follows: In part **1.2**, the methodology of the thesis and the initial database research process are explained. In part **2**, the economic implications of procreation are shown: The microeconomic theory of procreative decisions as well as practical implications are shown in **2.1**, whereas the macroeconomic effects of fertility are discussed in **2.2**. The philosophical part will start off in part **3** by formulating an *environmental precept to limit one’s family size* and argue for the need of a *global* justification of procreation on this basis. In **3.2**, an argument for the need of *local* justification is given based on the argument that procreating exposes an unconsenting child to harm. The established need for local and global justification is addressed by investigating different accounts of justification and by formulating

what is argued to be a valid *global* and *local* justification for procreating in part 3.3. Lastly, a summary and outlook, as well as an appendix and the references are given in part 4.

## 1.2. Methodology

### 1.2.1. Economic Perspective: Becker's Theory and macroeconomic Approaches

The *economic* part of this thesis is split into *microeconomics* and *macroeconomics*. The overall goal of the economic part of the thesis is to provide an overview of the economic implications of procreation, both on the micro- and macro-level. The philosophical part will then assess whether these implications are sufficient justification for procreation. In the microeconomic part, the basic microeconomic principles laid out in Varian (2019) are briefly described. Thereafter, Becker's (1960; 1973; 1976) model of household fertility and its subsequent refinements are used to arrive at a theoretical foundation for fertility at the microeconomic level. Lastly, empirical findings are adduced to show how the cost of children and happiness prospects could influence procreative decisions.

Part 2.2 will then investigate the macroeconomic implications of fertility rates. To this end, a version of a *Semi-Systematic Literature Review* (or *Meta-Narrative Literature Review*) according to Snyder (2019) and Wong et al. (2013) will be utilized. A Semi-Systematic Literature Review (SLR) has the objectives of showing the different methodologies used by different studies, and to summarize their findings. This type of Literature Review was chosen because many of the different studies about fertility and economic impact are conceptualized differently and follow different research questions and methodologies. The SLR's goal of showing the progress of research over time and a synthetization of the findings "using meta-narratives instead of measuring effect size" (Snyder, 2019, p. 335) was thus deemed appropriate. The initial research has been performed via online database searches. Used databases and keywords are shown in TABLE 1. The keywords were used in all databases.

Furthermore, referenced articles in the work found via online research were also examined for their suitability. The literature found was reviewed in a two-stage manner by reading abstract and conclusion of the articles first, before reading the full journal. Any study whose title suggested to investigate the connection between fertility and economic performance was considered. The main exclusion criterion of studies that seemed appropriate when judged by their titles was their investigation of economic development on fertility instead of a vice-versa investigation (for examples see Sobotka et al. (2011) or Rijken (2006)). The relevant studies were then compared and bundled into model-based and empirically based research, and into studies investigating the effect of lower fertility in high-fertility low-income countries and studies investigating low fertility in low-fertility high-income countries. While conducting the SLR, it quickly became apparent that most existing studies are concerned with the economic effects of (lower) fertility rates in countries with weak economic sectors, and thus not too relevant for this thesis. Because of this, the concept of an SLR ultimately was partially abandoned and such studies were only briefly mentioned before focussing on two studies that investigate the effects of low fertility in countries with strong economic performance.

### 1.2.2. Philosophical Perspective: Defining justified Procreation

The goal of the philosophical part of the thesis is to defend the main claim of this work: *“Procreation in countries of the Global North must be extensively justified locally and globally in order to be morally defensible”*. To find suitable literature, an online search with keywords depicted in **TABLE 2** was performed, and book recommendations by the thesis supervisor were incorporated. In a subsequent two-stage (Title-Abstract) review, literature and papers were assessed using the criteria listed in **TABLE 3**.<sup>1</sup> A third source of literature were Brake and

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<sup>1</sup> In the case of an article possessing inclusive *and* exclusive features, the exclusive features are overriding the inclusive features.

Millum (2022). Using these means, roughly 35 sources were identified for further examination. Referenced work in the examined sources was also considered with the criteria in Table 3 and examined if necessary. Each piece of literature that was deemed considerable was then reviewed in depth. In this process, the main claim and argumentation structure and the useability for proving or disproving the hypothesis were identified. Using the obtained knowledge, arguments to defend the main thesis were elaborated. The methodological structure provides that at first the concept of *global* and *local* justification is defined by building on existing concepts of *carbon impact* and Seana Shiffrin's (1999) account of the permissibility of imposing harm on unconsenting individuals. The methodological structure then provides argumentation that these types of justification are needed for procreation to be morally defensible. After that, possible accounts of justification are examined and assessed against these concepts. The refutations of different possible accounts of justification are used to not only confirm the hypothesis, but also to define an account of *justified procreation*.

## 2. Economic Perspective on Procreation

### 2.1. Microeconomic Perspective

#### 2.1.1. Theoretical Foundations

The goal of this paragraph is to lay down a rough foundation of microeconomic principles. Microeconomics studies individuals, households, and firms by investigating production and consumption decisions that are made in a market environment. Thus, “microeconomic study deals with what choices people make [...] [and] what factors influence their choices” (The Economic Times, 2022). Three main concepts are important: The *budget constraint*, *preferences*, and *utility*, which are explained in the following.

The *budget constraint* is a consumer's constraint on purchasing goods  $x_1, x_2$  at the prices  $p_1, p_2$  with their monetary supply (budget)  $m$ . The consumer can realize different *consumption bundles* with their budget. Consumption bundles consist of two goods,  $x_1$  denoting the amount of one good (in our case *expenditures for children*),  $x_2$  the amount of the other good (here: *anything but children expenditures*). A consumer can thus purchase the bundle  $(x_1, x_2)$ . *Consumer preferences* are the ranking which a consumer would assign to different consumption bundles, if given the opportunity. If a consumer *prefers* the consumption bundle  $(x_1, x_2)$  over another bundle  $(y_1, y_2)$ , it implies that they would *always* choose the x-bundle over the y-bundle if given the choice. If the consumer is *indifferent* between  $(x_1, x_2)$  and  $(y_1, y_2)$ , it implies that the consumer would be equally satisfied with consuming either of the two consumption bundles. Preferences are assumed to be 'well-behaved', which means they are *complete, reflexive, transitive* and *monotonic*. Completeness means that any two consumption bundles can be compared to each other. Reflexiveness assumes that "any bundle is at least as good as itself" (Varian, 2019, p. 35). Transitivity implies that "if the consumer thinks that  $X$  is at least as good as  $Y$  and that  $Y$  is at least as good as  $Z$ , then the consumer thinks that  $X$  is at least as good as  $Z$ " (ibid.). A set of monotonic preferences imply the rather intuitive notion of 'more is better'. Lastly, *utility* is described as a "*way to describe preferences*" (Varian, 2019, p. 54). Generally, utility is an abstract concept that allows for a numerical ranking of different consumption bundles, based on the satisfaction that the consumer gets from each bundle.

All these factors combined lead to the possibility of determining the *optimal choice* for consumers: The optimal consumption bundle  $(x_1^*, x_2^*)$  is one that – in accordance with the given set of preferences – allows the consumer to reach the highest possible utility with the budget available. In other words: Microeconomic theory holds that a consumer or a household will always consume in a way that maximizes utility by spending the whole budget  $m$  on a utility-

maximizing consumption bundle. This basic relation can be used to investigate procreative choices of a household.

### 2.1.2. Microeconomic Theory: Becker's Model of Household Fertility

Gary S. Becker, in his 1960 essay “An Economic Analysis to Fertility”, was one of the pioneers of linking fertility and economics. Becker argues that children can be considered consumer durables, based on the assumption that children are either a source of income<sup>2</sup> or a source of satisfaction (and thus of *utility*) for parents. This means that parents, given a certain set of preferences, are provided with utility by having a number  $\partial$  of children. While children do provide utility, there is a cost associated with children for food, clothing, day care, toys, etc. – in microeconomic terms, the price ( $p_1$ ) of the good *children* ( $x_1$ ). Thus, it is possible to compare the expected utility of  $\partial$  children with the expected utility of another consumption bundle – possibly a bundle that does not include any children at all. The notion of *expected* utility is important here, since households cannot know the *exact* utility they derive from their children: The parents' utility derived from their child might change depending on physical endowments, gender, accomplishments in life and so on. According to Becker's model and standard microeconomic theory, prospective parents would procreate if the expected utility in relation to the expected cost of having one more child were greater than the utility gained from spending the money elsewhere. He concludes that procreative considerations of prospective parents are thus influenced by “income, child costs, knowledge, uncertainty, and tastes” (Becker, 1960, p. 231). Becker also distinguishes between children *quantity* and children *quality*, where a child's quality is related to the money spent on a child: If the parents spend more on a child (for example by paying for private schools, music lessons, separate bedrooms

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<sup>2</sup> With laws prohibiting child labour and general economic advancement, children are no longer seen as a source of income nowadays in the Global North.

etc.), Becker assumes them to be “higher quality” children than children that the parents spent less on. *Quality* of children is, importantly, a purely economic notion to depict how much money the parents voluntarily spent on a child because it maximizes their (the parents’) utility – *higher quality* thus does not imply *moral* superiority of such children in any way. Parental utility is then determined both by children *quantity* and *quality*. Becker (1960) uses the example of consumer goods to argue that with rising income, consumers do not buy larger numbers of durables, but instead opt for higher quality ones – for example, a household with higher income would not opt for a higher *quantity* of fridges, but rather for a higher *quality* one. Becker then extends this argumentation structure to argue that the quantity income elasticity of children is relatively small, while the quality income elasticity is larger: With rising income, parents choose to invest more money into their children rather than having more children. This dimension is crucial, as the microeconomic theory would otherwise have to suggest that households will produce more and more children with rising income.<sup>3</sup> Furthermore, it can be used to explain a *quantity-quality trade-off*: In an extension to his model, Becker and Lewis (1973) formalize the assumption that the *quantity* and the *quality* of children are separate factors for the utility function of a household, yet they are closely connected through the budget restraint of the household. The implications of this extension are “that if child quality increases (more spending per child), increasing quantity (more children) becomes more expensive. Conversely, if quantity increases, increasing quality also becomes more costly, because the spending on quality accrues for each child” (Doepke, 2014, p. 4). The model is further developed by Becker and Tomes (1976) by taking child endowment into account. *Endowments* are factoring into child quality and are influenced by the household (such as genetic characteristics) but also by factors outside of the household’s control such as “inherited ability, public investments in children, ‘luck’ and other variables” (Becker & Tomes, 1976, p. 144).

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<sup>3</sup> The reason being that rising income leads to a shift of the budget restraint which usually suggests that a larger number of children would be “consumed”, since preferences are assumed to be monotonic.



In short, Becker's model establishes on a household level that with rising income, lower birth rates are to be expected because of the quantity-quality trade-off. While Becker's model is useful in acknowledging economic factors that affect procreative decision-making, it must be said that there are many other factors not within the scope of his model which are extremely important in determining household fertility as well. Becker's model uses the vague notion of *utility* to describe the various reasons for which parents procreate (or not). Since *utility* does not differentiate between the vast number of reasons that go into a decision as weighty as procreating, Becker's model can only be seen as a partial micro-foundation of the fact that higher income countries usually have low fertility rates. It is noteworthy that Becker expands his model into the macroeconomic territory, linking capital accumulation and *human capital* accumulation to the choice of families to have less children: Because of the quantity-quality trade-off, it is argued that families will rather have fewer children that benefit from larger investments into their human capital, than having more children with less human capital (Becker, et al., 1990). This trade-off will also play a role in the macroeconomic part of this thesis.

There are possible additions that may be made to make Becker's microeconomic model more precise, such as the addition of a *time*-variable to take potential future income (and changes thereof) into consideration (Namboodiri, 1972). Old-age provisions and elder care potentially provided by children and other factors such as biological considerations of procreating after a certain age may also be incorporated into a more sophisticated model. However, for this thesis the basic quantity-quality trade-off and its implications for income-related change in procreative behaviour is sufficient. Becker's model will be subject to further criticism in part [3.3.1](#).

### 2.1.3. (Micro-)economic Practice: Cost of Children and Happiness:

In the following paragraph, some practical economic implications of procreation are discussed. The term *microeconomic* is used liberally to describe the analysis from an individual/household level in economic terms. To this end, the cost of raising children and the influence of children on old-age provisions for individuals will be discussed first. Afterwards, an empirical study that concerns itself with *happiness* after having children will be presented. Aim of this paragraph is to show some practical economic implications of procreation.

One point to consider is the price of rearing a child. While many governments try to incentivize procreation through baby bonuses, tax cuts, family allowances and other mechanisms (United Nations, 2017), a large sum of the cost is still shouldered by the parents. Exemplarily for countries in the Global North, studies from the USA and Germany show that the average approximated cost of raising a child until it is of full age total roughly US\$234,000 (U.S. Department of Agriculture, 2020) and roughly €165,000 (Statistisches Bundesamt (Destatis), 2021) – the real cost being substantially higher due to opportunity cost and lost income from parental leave. In the US, the cost of children has been shown to be one factor that prohibits prospective parents from having (more) children (Miller, 2018). Another factor that may play into (micro-)economic considerations is old-age provision: Parents may consider procreation under the egoistic aspect of receiving financial support or eldercare – a common reason for procreation in the Chinese society, for example (Choukhmane, et al., 2017) – or simply for having close contacts even after all their friends have already died (Foster, 2011). Laferrère and Wolf (2006) show that the old-age provision dimension of procreation can be modelled in a game-theoretical way in microeconomic theory: A model that investigates wealth transfers over three generations suggests that intergenerational wealth transfers and old-age provision can be explained if it is assumed that „defectors“ are punished: If children see that their parents are not participating in providing old-age provision for their grandparents, they

would punish their parents by not participating in the intergenerational upwards wealth transfer either. This theoretical foundation can be employed to explain why some children feel obliged to support their elderly parents. On the other hand, if one wants to maximize their old-age provisions then it does not seem unreasonable<sup>4</sup> for them to avoid having children due to their high cost – the money saved can then be used towards a retirement fund. This shows that other preferences are also at play when it comes to procreation, further strengthening the point that Becker’s model can only be used as a partial explanatory instrument for empirical findings.

Lastly, one empirical example will show how *happiness*, understood as subjective well-being of parents, evolves in the years after childbirth. Myrskylä and Margolis (2014) investigate happiness in a longitudinal study of German and British parents. The main findings are that parental happiness sees a large increase in the months leading up to birth and in the year after the birth. After this initial spike, happiness drops to levels that, in some demographics, are below pre-birth levels (these findings are largely consistent with other studies such as Pollmann-Schult (2014), Matysiak et al. (2016), and Aassve et al. (2021)). Myrskylä and Margolis (2014) derived two more notable findings from the data: Firstly, diminishing returns of happiness from childbearing were observed, which is in line with most microeconomic theories on utility and the diminishing returns for most goods. Secondly, the data suggests that “those who gain from childbearing most are those who have one or two children at an older age after acquiring educational and financial resources” (Myrskylä & Margolis, 2014, p. 1864). Accordingly, childbirth was shown to have negative effects on happiness levels for younger parents even in the longer term, which can possibly be explained by younger parents being less “ready” for parenthood than older parents (Gregory, 2012).

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<sup>4</sup> Using a retirement fund calculation formula with periodic investments of the average German monthly expenses for a child into an S&P500 index fund (avg. annualized ROI of 7%) over 18 years shows how opportunity cost and compound interest would render children a rather poor investment – monetary-wise – for old-age provisions.

To summarize: Becker's quantity-quality trade-off and diminishing returns to childbearing may be used to partially explain why birth rates in economically advanced countries tend to be lower. However, there are multiple factors that are not accounted for and which, if one would want to incorporate, would go beyond the scope of this discussion. On the more general microeconomic level, it has been established that the enormous cost of children as well as happiness prospects of parents may be factors that limit procreative intentions of households and that are to be considered by prospective parents.

## 2.2. Macroeconomic Perspective

### 2.2.1. Fertility and Economics: The Focus of early Studies on High-Fertility Countries

Since the 1960s, economists have been researching the connection between fertility and economic performance of a country (Sanderson, 1976). *Economic performance* is used here as an umbrella term for economic indicators such as GDP and income per capita growth. The goals of early studies were reliable policy recommendations for countries in the Global South that had high birth rates and low economic growth (cf. Enke, 1970) and a general understanding of the matter. For example, Enke (1970; 1971) makes use of a demographic-economic model "Developa", an economy with high initial fertility rates which are assumed to be endogenous to the model. He finds that, when contrasting fertility projections, a lower fertility leads to faster capital accumulation. Over time, model studies became more sophisticated by taking real-life data into account. Most model-based research has been found to link lower fertility rates to increased GDP or income per capita due to a growing capital stock and a higher share of working-age population (Bloom, et al., 2003; Lee and Mason, 2010; Ashraf, et al., 2013; Liao, 2013). However, all of the earlier studies as well as numerous recent ones are investigating the impact of fertility on economic development in countries where fertility used to be (or still is) very high while having weak economic sectors – countries in the Global South. Thus, most of

their findings are not applicable for countries in the Global North who often have fertility rates below replacement level (World Bank, 2021), an aging population, and more often than not a high level of technological and economic advancement (Odeh, 2010).

### 2.2.2. Fertility and Economics: The recent Shift towards Implications of ‘too low’ Fertility

While studies and models concerned with ‘too high’ fertility were present since the 1960s, the research work for this thesis found that studies investigating the economic effects of below-replacement fertility rates in countries of the Global North have only started emerging in recent times and the field has, so far, gained little traction. In a model that incorporates age structure, population growth and the capital stock, Bloom et al. (2010) argue that while lower fertility does boost economic performance in the short run due to the growth of the share of the working population, the implications in the long run are different: The study suggests that there is a level of fertility that maximizes the share of the population of working-age, and thus economic performance. Since almost all European countries have fertility rates below such a maximizing rate, they suggest that in the long run an economic downturn is to be expected, as the population of such countries ages and the share of the working-age population drops. Bairoliya and Miller (2021)<sup>5</sup> investigate the effects of a fertility bump by using an empirically backed model of China, a country characterized by a low fertility and an ageing population. The determinants of income per capita in this model are savings, physical capital accumulation, education (*human capital* accumulation), and female labour supply. Bairoliya and Miller also consider the quantity-quality trade-off, which has large implications for the outcome of the study: Using data projections and different fertility scenarios, they establish that a higher fertility in China would lead to lower income per capita because decreased physical capital accumulation,

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<sup>5</sup> Their model was first discussed in Bairoliya et al., (2017), and the relevant findings from the 2017 papers carry over to the peer-reviewed 2021 paper.

decreased female labour supply, as well as less education (*human capital accumulation*) would counteract any gains made from the growth of the workforce. Thus, they argue that the Chinese example shows that a maximization of the working-age population does not equal a maximization of income per capita. Yet, Bloom, et al. (2010) are not disproven: Bairoliya and Miller argue that the reason for a lower income per capita is partially because of the quantity-quality trade-off: Chinese households would (necessarily) invest less money in the education of their children if they have more children due to the sheer cost of education, which leads to a dilution of human capital and ultimately to negative effects on the income per capita. However, while the authors argue that their findings are generalizable for other countries, they also acknowledge that a higher fertility may have positive effects on income per capita in other countries with different educational or human capital structures: “Faster aging economies with already high levels of human capital, such as Japan, Germany, Italy, Finland and Portugal [...] might benefit from a bump in fertility in the long run” (Bairoliya & Miller, 2021, p. 23). There are further-reaching problems of an ageing population as well which could be alleviated by higher birth rates: higher expenditures per capita on healthcare, a shrinking labour force, and problems for pension systems due to the rise of the ratio of beneficiaries to contributors are pointed out by Christiansen et al. (2006) and Bloom et al. (2011). To summarize, it has been shown that earlier studies were mostly concerned with countries with high fertility rates and low economic output, which makes them less relevant for this thesis. More recent studies on economies with low fertility rates show that *too low* fertilities may lead to an economic decline, to problems on the labour market and for pension systems, and that a fertility bump may be beneficial for certain countries – these can be seen as some of the reasons why most countries in the Global North are incentivizing child births nowadays (Howe, 2019).

### 2.2.3. Procreation in Economics – Combining Microeconomics and Macroeconomics

The findings from this chapter can be summarized as follows: Microeconomic analysis allows us to rationally make sense of procreative choices of parents: If the (expected) utility of having one more child is higher than the expected utility of spending the money elsewhere, then it is rational for them to procreate. Parents would thus – given the right preferences – procreate for as long as they have the budget to do so, stopping at a certain number of children to invest into children *quality* rather than focusing on *quantity* alone. The *quantity-quality trade-off* can be seen as one of many explanatory factors for lower fertility in countries with an overall higher economic performance. From a macroeconomic perspective, it has been shown that too low fertility rates (as sustained by countries of the Global North) may lead to an economic downturn and prove to be a challenge for pension and healthcare systems. Thus, it can be concluded that from a purely economic perspective procreation is advisable, given that (a) children are necessary for reaching a household's highest possible utility and (b) within the household's budget, while (c) the parents live in a country with fertility below replacement rate.

Such a conclusion is obviously the result of the extremely narrow understanding of the term *economics*, a necessity in this rather short thesis. Thus, I will mention a (non-exhaustive) number of caveats which also deserve consideration: In the microeconomic model, the criticism about other factors that also influence procreative decisions and a time-variable ought to be given attention. In the macroeconomic part, the biggest caveat is the fact that *welfare* of individuals cannot be equated with economic performance. Having children for economy's sake is great for economists but may not be the greatest decision for the individual households for a variety of reasons – after all, a higher GDP does not imply a higher welfare for all members of society. Thus, it is necessary to see the economic implications in this thesis as a possible justification for procreation (the validity of which is to be assessed in the philosophical part) and as nothing more. This leads the discussion to the normative part of this thesis.

### 3. Philosophical Perspective on Procreation

#### 3.1. (Weak) Environmental Precept to limit one's Procreation: Justifiability before Others

##### 3.1.1. Procreation in the Global North: Comparable to Overconsumption?

It is established that countries in the Global North have per capita greenhouse gas emissions that are far greater than the per capita emissions of countries in the Global South (World Bank, 2022) for various reasons such as a large reliance on fossil fuels, greater consumerism, larger meat and dairy consumption, industry, and so on. Any child born in a country in the Global North will lead a life that requires more resources than the life of a child in the Global South (United Nations, 2021). At the same time, people in the Global South are disproportionately affected by the consequences of climate change (IPCC, 2021). Jason Hickel (2020) conducted a study utilizing a framework of atmospheric commons to show that the nation-states that amount to today's Global North are responsible for 92% of excess global CO<sub>2</sub> emissions. When taking these facts as well as the current state of the world climate and future climate projections into account, there is a strong case to be made for people in the Global North to thoroughly consider their procreative intentions: It is a well-known fact for people in the Global North that their lifestyle is not sustainable, and that every additional child exacerbates the problem, so they cannot appeal to ignorance. Furthermore, contraception is readily available, and children are not *needed* anymore (e.g., for old-age provision or for their labour). These facts were also reflected by Thomas Young (2001), who drew an analogy of procreation being equivalent to overconsumption. Young grounds his analogy in the fact that both “are voluntary, arise from the same desires, and produce similar foreseeable, unintended environmental impacts” (ibid., p. 183). Furthermore, Young argues that the motives of overconsumption and procreation are “often identical: cultural expectations, improved status, elevated self-esteem, increased happiness, or an altruistic desire to share with others” (ibid., p.



185). Young holds that overconsumption and procreation must thus be seen as equivalent, as both are increasing the carbon footprint of individuals extensively. Assuming that both overconsumption and a too large carbon footprint are both seen morally wrong, Young concludes that procreation must be seen as morally wrong as well: “Since having even just one child in an affluent household usually produces environmental impacts comparable to what mainstream environmentalists consider to be an intuitively unacceptable level of consumption, resource depletion, and waste, they should also oppose human reproduction (in most cases)” (ibid., p. 183). His argument is supported by the method of calculating the carbon footprint of procreative parents in the following way: The parents’ footprints are enlarged by the footprints of the children that they produce, as these children would not exist and thus not have *any* footprints if the parents would have chosen not to procreate. However, Young’s methodology must be criticized.

### 3.1.2. Pinkert and Stickers Critique of the Analogy

Pinkert and Sticker (2021) identify two main problems with Young’s analogy: Firstly, ascribing the carbon footprint of the offspring to the parent’s footprint – either in part or fully – leads to *double-counting*. For an example, one can take two parents with a footprint of 1000t CO<sub>2</sub>-Equivalent each. If they procreate, they create a child that will also have a footprint of 1000t CO<sub>2</sub>-Equivalent. In Young’s theory, the offspring’s footprint would now count towards the footprints of the parents, which would then total to 1500t each – all while the child would *also* have a footprint of 1000t. This is highly problematic since double-counting interferes with the three main goals of the principle of carbon footprints, namely “measurement, evaluation, and guidance” (Pinkert & Sticker, 2021, p. 301): A (carbon) footprint measures the limited resources that a person is using up, and implicitly suggests a moral responsibility for one’s actions. Double-counting emissions is highly inconsistent with the principle of providing

measurement and guidance on the implications of one's actions, and with the very idea of the carbon footprint to show how much of a resource is *actually* used up. In the example above, the 1500t footprint of the parents implies that the *total footprint* of the small family would be 4000t, when it really amounts to 3000t.<sup>6</sup> The consumption of the child would amount to 1000t of CO2 equivalent, but the emissions of their consumption count both towards their own footprint and to their parents'. This implies that, since the footprint is used to illustrate how many resources one is using up, the *same set of resources* is used up *twice*. This makes the footprint thesis inconsistent with the idea of it being a measure of the resources someone is using up. Thus, it follows that double-counting emissions as done by proponents of Young's theory is to be avoided. The second problem identified is that Young's argument *overgenerates*: By using the example of Roxanne, an ER surgeon who saves lives that would be lost without her, Pinkert and Sticker show that Young's criteria used to argue for an equivalence of overconsumption and procreation would also apply to her actions: When Roxanne saves a patient, it is *foreseeable* that this patient will continue to lead a life that has environmental impact and a certain carbon footprint, an impact which would not have occurred had the patient died. Roxanne's actions are *voluntary*, and her motives may also be similar to motives that, according to Young, actuate overconsumption, such as "cultural expectations, improved status, elevated self-esteem, increased happiness, or an altruistic desire to share with others" (Young, 2001, p. 185). According to Young's reasoning, Roxanne's work as an ER surgeon would thus be comparable to overconsumption, and thus her footprint would have to include the emissions of the patients she saved. This conclusion can be charged with implausibility: Roxanne's footprint is used to measure *her* using up of atmospheric capacities. If one wants to avoid double-counting while assigning (parts of) her patient's footprints towards Roxanne's footprint, it would follow that Roxanne herself "uses up the respective absorption capacity of the atmosphere, and that *she in*

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<sup>6</sup> Pinkert and Sticker show further illogical consequences that arise from Young's argumentation which were left out for the sake of conciseness.

*particular* has to answer for, justify, and potentially reduce these emissions” (Pinkert & Sticker, 2021, p. 310). It would, for example, follow that Roxanne would be responsible for the emissions from a long-distance flight that one of her patients takes to celebrate their recovery (cf. *ibid.*), which is implausible since such emissions should only be the responsibility of the patient themselves.

### 3.1.3. The Concept of Carbon Impact

Pinkert and Sticker acknowledge that procreation is not environmentally neutral – after all, parents that decide to procreate *do in fact* bring another person into the world who uses up the world’s resources. Thus, they offer a novel concept for climate ethicists, namely *carbon impact*. “While personal carbon footprint measures how much of the limited absorption capacity of the atmosphere a person *uses up*, carbon impact measures how much of a *difference* an activity makes to overall emissions” (Pinkert & Sticker, 2021, p. 313). Procreation must then be seen not as something that adds to the parents’ carbon footprint, but to their carbon impact. This concept circumvents the problematic aspects of double-counting, but it also weakens the moral implications of procreation: Since Young’s analogy to consumption does not hold, a moral impermissibility of having children cannot be established on the ground of moral impermissibility of (environmentally harmful) overconsumption. What remains is the fact that having fewer children would lead to fewer overall carbon emissions.

### 3.1.4. Moral Ambiguity of Carbon Impact

Here, this thesis argues that the concept of carbon impact is *morally ambiguous*: The morality of higher carbon impact is dependent on the underlying moral principles and on the

justification of the act which caused a higher carbon impact. Roxanne will have a very high carbon impact due to the lives she has saved, however she has a good justification for her impact (saving lives). Her actions can thus, from our environmental perspective, hardly be seen as immoral. However, consider the fictional case of *AIDA-Arthur*: Arthur spends most of his time online, spreading misinformation about climate change and the environmental impact of cruise trips. Arthur does so because he owns shares in a cruise company, and he wants his company to have great business for his own monetary gains which he intends to spend on himself. If Arthur convinces people that climate change is not real or convinces them to go on a cruise trip, then he has a high carbon impact just as Roxanne does. However, the underlying moral principle of saving lives is vastly different to the principle of personal enrichment. In contrast to Roxanne, Arthur's carbon impact would not be morally sound.

The concept of carbon impact will be used in two ways: It will firstly be utilized to argue that there is a precept on environmental grounds to limit procreation. Secondly, the moral ambiguity together with the environmental precept will be used to argue that procreation, in the light of the high carbon impact of an additional child in our current world, must be justified before others (*global justification*).

### 3.1.5. Arguing for a Precept to limit Family Size and for the Need of global Justification

To establish the environmental precept to limit one's family size, it is presupposed that there is a duty to future generations to try to limit one's impact on the environment.<sup>7</sup> The argument goes as follows: Having children nets the parents a higher carbon impact, since without the parents' procreation, the polluting actor would not have been born. If there is a duty

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<sup>7</sup> While some authors may disagree, such an obligation can be considered as being the consensus nowadays. Furthermore, with this thesis being concerned with prospective parents, anyone considering procreating does likely have the next generations' best interest in mind which allows for such an assumption.

to future generations to limit our impact on the environment (as presupposed), then one should seek to limit their carbon impact. Thus, parents ought to limit their carbon impact. It follows that, given the high carbon impact of additional human beings in the Global North, there is an environmental precept to limit one's family size, as the negative impact of having (too many) children on other (possibly future) individuals is too large. Note that this precept is morally neutral towards the act of procreation, as it only considers facts about emissions of future children in the Global North. The precept by itself is thus only a 'reminder' for prospective parents to consider the impact they have on the environment by procreating. While it starts off as a weak precept, it may also become stronger depending on the number of children a couple has, as argued on page 32.

A higher carbon impact is morally ambiguous, it may be justifiable (as in Roxanne's case) or less justifiable (as in Arthur's case). Because of this, without any knowledge about the parent's justification, procreation is *prima facie* morally neutral from an environmental perspective. Different parents have different justifications for having children, just like Roxanne and Arthur have different justifications for their carbon impact. It follows that while there is a general precept to limit one's family size, the justification matters significantly in determining the moral permissibility of procreative intentions. If prospective parents seek to procreate, they must offer the right justification for their undertaking, since it will result in a large and preventable carbon impact. Carbon impact not only concerns the parents and their child, but also – given the global nature of the problem of climate change – every other person (as well as every future person) on the planet. Accordingly, parents must provide a *global justification* for procreation.

### 3.2. Risk of Harm without Consent: Justifiability before the Child

#### 3.2.1. Shiffrin's Argument of imposing Harm on unconsenting Individuals

Environmental concerns are not the only problem with procreation. In the following paragraph, it will be argued that parents also ought to be able to justify their procreative intentions before the child. Seana Shiffrin's (1999) view of the significance of exposing unconsenting individuals to harm is utilized for the basic argumentation: Shiffrin holds that we should only impose a harm or risk on an unconsenting individual if we do so to either remove the individual from harm, or to save the individual from experiencing any greater harm. An example would be an emergency doctor who has to break the arm of an unconscious driver in order to remove him from his car before it catches flames. By doing so, the doctor would harm the unconsenting driver to save him from greater harm and would be justified in doing so. Shiffrin further holds that any individual who is born will experience harm of some sort, and thus one imposes harm on a child by bringing it into the world. Such harm can substantiate in disappointments, loss of loved ones, pain, suffering, difficulties in life, the certainty of death and many more forms. More importantly, "[a]ll of these burdens are imposed without the future child's consent." (Shiffrin, 1999, p. 137). Since the act of procreation is not done to prevent any greater harm (since the child would not experience *any* harm, nor any pleasure, if it is not born), Shiffrin establishes that procreation is "morally hazardous" (ibid.). This calls for the need of parents to be able to justify their procreative intentions before their children: A child may ask her parents *why* they chose to bring her into existence: In her life, she has to endure sufferings that range from not being allowed by the parents to eat a full tub of ice cream or stubbing her toe to the pain that is endured from breakups, the loss of a loved one, war, natural disasters, or possibly the suffering caused by a terminal disease such as cancer. The child may demand answers that are satisfying, given that she would never have had to experience such harms had she simply not been born, and given that she never consented to be born. Parents must be able

to offer their child a good justification for their action of bringing the child into existence, otherwise their procreative act is immoral with respect to the child. Accordingly, parents must provide a *local justification* for procreation.

### 3.3. Accounts of Justification

The right justification for procreation is what differentiates permissible and morally sound procreation from morally impermissible procreation. Accordingly, an account of what counts as justification and what doesn't is needed and will be presented in this paragraph. At first, the economic implications from part 2 are assessed in their ability to justify procreation. After that, a more general Kantian argument is given to show why consequentialist arguments alone are not sufficient justification. Then, it is argued that while the wish to experience parenthood, to establish a parent-child relationship, and the ability to provide a good life are good *reasons* for wanting children, these possible justifications often fail to give both local *and* global justification. Lastly, a valid account of global justification based on the uniqueness of pregnancy is given. This justification is further provided with requirements that, if fulfilled, constitute sufficient local justification.

#### 3.3.1. Justification from an economic Argument?

As argued in part 2.2, in countries with low fertility rates there are negative consequences to be expected from a too low fertility for pension systems and economic growth, and in the long run a higher fertility would benefit the economy. For the individual parents, the microeconomic part 2.1 was used to argue that children can be seen as consumer durables that have a certain cost and provide a certain utility. Becker's model can be criticized because social

factors may affect family size and prompt prospective parents to procreate even if they cannot afford to do so. There are also biological factors such as infertility, and normative or moral factors such as the fact that parents usually cannot revert the decision to have a child if the actual realised utility falls below the expected utility of the child, and that parents have normative constraints on how to handle their children (Blake, 1968). Becker's model also regards children as having a *price*. In the economic argumentation model, parents who would procreate would do so to reach a higher utility, and/or to bring about economic benefits which are ultimately enjoyed by the whole society. While it is true that rearing children is costly in actual and opportunity cost, most parents would usually not procreate and accept the cost of procreation to 'help the economy' and see these costs as the 'price' they pay (Dorbritz & Ruckdeschel, 2018). Instead, they procreate because they personally value parenthood and procreation and because "they attach positive value to the existence of those children as such, irrespective of any positive, and perhaps even negative, external effects" (Casal, 1999, p. 367). More generally, a purely economic view on children may be helpful for economists to give general policy recommendations (such as birth incentivization), but the usefulness vanishes for *individuals* who seldomly consider their children to be solely "cogs in the economy", as Berke (2019) puts it. The biggest problem with justifying procreation on economic factors lies, however, in the understanding of children as providers of *utility* and as mere economic factors that lead to better or worse economic performance. An economic justification of procreation would have the underlying principle of regarding children as *means to an end*, for example as means to economic growth or a well-functioning pension system. Such a justification cannot hold, as it will be shown in the next paragraph.



### 3.3.2. Regarding Children as Means to an End: Consequentialist Justification?

Prospective parents may justify their procreative intentions by statements such as ‘I want to continue my bloodline’, ‘children are cute and I like to take care of them’, ‘I want someone to love/someone to love me’, ‘all my friends are doing it so we felt like it was the right thing to do’, ‘we want someone to take care of us when we’re old’, ‘my partner wants a child and I want to save the relationship’, ‘we wanted someone who’s representing our love and relationship’, ‘it’s good for the economy!’, and so on. All these arguments regard of the future child as *means to an end*, rather than as an end in itself. In the given examples, these ends may be: Pride and family, one’s preference for children, attention and love, social conformity, old-age provision, a relationship, openly exhibiting one’s love and relationship, the economy. More generally, all consequentialist arguments that are used to justify procreation will regard either the child or the mother as means to an end.<sup>8</sup> Immanuel Kant’s categorical imperative says: “So act that you use humanity, whether in your own person or in the person of any other, always at the same time as an end, never merely as a means” (1998, p. 38). With the Kantian perspective that is utilized here, having children for such consequentialist reasons is morally wrong because it *uses other individuals as means to an end*. Given that, from this Kantian standpoint, procreation on such grounds would be morally impermissible, such consequentialist arguments cannot be a satisfactory justification for procreation. One could counter this reasoning by arguing that Kant does not believe children to be fully rational agents, and that the categorical imperative cannot be applied for this reason. While this objection may hold in the first instance, it must be noted that a child will eventually grow up into a being that is fully rational even in Kant’s terms. Accordingly, the now-rational child is still treated wrongly if it has been conceived and treated merely as means to an end. One could delve further into this discussion, arguing that a child that was conceived for the ‘wrong’ reasons but then ultimately (because, for example, the

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<sup>8</sup> See Overall (2012), ch. 5 for other examples

parents recognized their mistake or learned to treat their child as an end in itself) is treated not merely as means to an end once it is rational is not wronged in the Kantian sense. This counterargument can be objected as well: It is true that a child that has been born merely as means to an end, for example because the parents want to receive government benefits of some sort which are only receivable if one has a certain number of children, is not wronged in the Kantian sense if the parents change their stance towards the child once the child is considered a rational being. The parents could have their child for the wrong reasons and then, at some point, realize that the new individual they created deserves to be treated as an end in itself, and a strict Kantian would find nothing wrong with that. However, there are practical implications for a child that is conceived for the wrong reasons: It is safe to argue that parents who treat their child as means to an end may create lasting psychological or even physical damage to their child, for example if the child does not fulfil the parents' expectations, or because the child's needs are not considered if they are not directed towards the child 'acting as intended'. For example, a child that is born for the sake of saving a relationship may have to suffer being witness to an abusive relationship between the parents and may even be forced to act as a mediator between the parents which can put enormous stress on the child and have lasting psychological effects later in life. This is just one negative example out of many possible, just as there are numerous counterexamples with positive outcomes which could be formulated. The take-away should be that if one accepts Kant's intuition that children are not within the categorical imperative's scope, this does not give universal justification to have children as mere means to an end because there are practical implications of the way the children are treated. For the argument in this thesis, the objection addressed here is unproblematic still: Because of the *argument from harm* and the need for *local justification*, it would be immoral to conceive a child for the wrong reasons because the justifiability *before the child* (which, at the point of asking about why it was born, can be assumed to be sufficiently rational) for why it was conceived and exposed to harm would not be sufficient. The reason is that the child, a then-

rational person, could plausibly condemn the reason for which it was brought into the world, and claim that their parents acted in an immoral manner.

It must, however, be added that Kant allows us to view children as means to some end, as long as we do not view them ‘*merely* as means’. It is thus obviously not wrong for a couple to have a child as a representant of their love and relationship, or even for the sake of the economy if this end is not the *only* reason and justification. Such ends may be a contributing factor, but they cannot lead to morally sound procreation. Accordingly, such ends can also not be seen as good justification. Instead, justification has to arise from something different.

### 3.3.3. Providing a good Life or experiencing and nurturing a Relationship?

Another possible line of argumentation for justifying procreation is outlined by two examples: Suppose that Jill and her husband Jack lead an overall good and happy life: They live in 21<sup>st</sup> century America, both are smart, well-educated, good-looking, financially stable, and neither of them has any illness that they may pass on to a possible child. Additionally, they are willing and able to raise their child in the best way possible and to support their child in any undertaking it may want to pursue. In such a case, it is reasonable to assume that their child would lead a very good life. Jack and Jill may thus argue that they want a child because it is almost certain that their child will be able to lead an objectively very good life. In such an argument, Jack and Jill could see their child as an end in itself, deserving to be cherished and nurtured. They could further argue that not only do they want a child, but it would also be a ‘waste’ to not enable a life which clearly has the very best prospects to flourish: Jack and Jill have something good to give, and they want someone – their child – to receive just that. Are Jack and Jill, in this *good life example*, thus justified to procreate?

Consider another example: Ben and Christine are two environmental activists who, through their conscious lifestyle, lead a life that is carbon-neutral and has no negative effects on the environment whatsoever. They have enough income to afford their lifestyle, and they could possibly spare enough to be able to provide one or two children with all the material resources needed to guarantee an overall satisfactory childhood and youth – the upbringing of the children would be carbon-neutral as well. Ben and Christine are neither the brightest nor possible contenders for the next season of *Germany's next Topmodel*, and since both have to work full-time their child would have to visit day care more often than not. Ben and Christine may not be materialistically rich, but they have lots of love to give and one of their greatest wishes is to experience the intimate parent-child relationship as well as the special bond that happens within a *family*. Ben and Christine may not be able to provide the best prospects to flourish, but they ground their justification in the parent-child- and family-relationship. Their justification lies in them wanting to experience *parenthood*: Something which cannot be recreated by having friends, siblings, nephews, and nieces. They acknowledge that their child is an end in itself and do not see their child merely as means to experiencing the sought-after family bond, but rather as an integral part of the whole construct that is family. They want to nurture a child and to see it grow up into an interesting and independent individual. Furthermore, they argue that their carbon-neutral lifestyle makes procreation environmentally justifiable. In this *love and parenthood-example*, are Ben and Christine justified to procreate?

The differences between the cases must be stressed: If they procreate, Jack and Jill will have a child that is likely to lead a very good life (because all the preconditions are there), and they want to procreate (partially) because they are aware of this fact. On the other hand, there are environmental implications of procreating for Jack and Jill since they live in the United States of America. Ben and Christine, on the other hand, will try their best to provide a good life for their child, but the child may still face serious hardship. Ben and Christine will cherish and nurture their child as well as they can, and they ground their justification in the special

parent-child relationship that they want to establish. Furthermore, there are no environmental concerns as their environmental impact is assumed to be non-existent. Thus, the *good life* example represents one form of local justification: The ability to provide for a good life, both in materialistic and in relationship terms. The *love and parenthood* example stands for the other form of local justification: The goal to enable a child to prosper, and the wish to experience parenthood. The two examples also have a *global* component, implicitly in Jack and Jill's case, and explicitly in Ben and Christine's case.

The answer is that both couples do not offer sufficient justification for their procreative intentions. While Jack and Jill can *locally* justify exposing their child to possible harm because of its good life prospects, they lack the *global* justification to create another human being: Wanting to provide someone with a good life allows for another possibility that does not create another human being who will emit large amounts of greenhouse gasses and ultimately lead to faster resource depletion: Namely *adoption*. If Jack and Jill adopt a child, they can still enable a life to flourish, but with wildly different moral implications: As Nolt's (2011) rough calculations show, every American is responsible for the serious suffering or death of *at least* one person through their greenhouse gas emissions. Adopting, on the other hand, would circumvent the moral dilemma of bringing another polluter into the world. Additionally, adoption would also *better* the life of an already existing person: David Wasserman (2015) would distinguish the moral implications by arguing that Jack and Jill would plan on making someone's life good if they choose to procreate, while they would make someone's life *better* if they choose to adopt. Thus, the possibility to provide a good life is not a sufficient justification for procreation: It lacks *global* justification. Ben and Christine face a different dilemma: Their procreative intentions are justifiable *globally*, as their carbon-neutral lifestyle means that their children would not negatively affect others on the planet. However, Ben and Christine lack justification *before the child*: The special parent-child relationship could also be achieved by means of adoption. As Rulli (2016) notes, there is a 'gap' between parenting and procreation.

In Ben and Christine's case, if their "argument for procreation is an argument for [...] experiencing *parenthood*, the argument for *procreative* parenthood in particular is still wanting" (Rulli, 2016, p. 311). Thus, it is not the case that Ben and Christiane are justified to procreate and expose a child to harm, even if doing so would be justifiable before others. It must be noted that very good life prospects and the parent-child relationship in its uniqueness are generally two good reasons for procreative intentions, and (as it is later shown) even necessary to fully justify procreation. They are thus *necessary*, but not *sufficient* justifications. By themselves, they can only explain why one wants to be a *parent*, but not why one can be justified to *procreate*.

#### 3.3.4. The desire to experience Pregnancy: Justification before Others

It has been shown that not any justification for procreating is valid, and that even valid accounts of justification struggle to justify why parents should procreate rather than adopt a child.<sup>9</sup> None of the arguments mentioned so far were, however, concerned with the *experience* of procreating, more precisely with experiencing pregnancy and the delivery of a child. Ingrid Robebyn calls procreative parenting "incommensurable with any other capability" (Robebyn, 2021, p. 10), and as Rulli (2014) correctly notes, "[t]o deny someone this experience may be to deny (what she takes to be) a foundational experience of being a *woman*. That is, pregnancy could greatly impact her conception of her life, its purpose, and the distinct character or shape of her life experiences. A desire for the pregnancy experience is not trivial and is not easily substitutable" (ibid., p.28). Thus, if a woman<sup>10</sup> has the deep desire to experience pregnancy, she

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<sup>9</sup> Tina Rulli (2014) brings forward counterarguments against the most common objections to adoption and argues for a *pro tanto* duty to adopt. With this thesis regarding *procreation* and not *adoption*, this highly interesting discussion is left aside.

<sup>10</sup> Since women are the ones who are 'experiencing' pregnancy with all its risks, ups and downs, the focus was deliberately not put on the male part of a procreating couple, since men do not experience pregnancy with their own bodies, but rather only in a "second-hand" fashion. Accordingly, women have the ability to justify procreation, while the ability of men to do so is still to be explored. Due to space constraints, his thesis omits any

is justified to procreate: Denying her such an experience would be *too much to ask*, even if the environmental consequences of creating another human being in the Global North are drastic. One could challenge this conclusion by arguing that the wish to experience pregnancy should not take precedence over the well-being of millions of (future) people, given the carbon impact of procreation. However: Morality, if it seeks to be a principle to live by instead of an overly idealistic concept, must not be too demanding – otherwise, the commands of morality would be collectively ignored, and the status quo would never change.

It must be added that the wish to experience pregnancy has been fulfilled after delivering one child. The justification before others on grounds of experiencing pregnancy may become too weak to allow for a second act of procreation. This statement is also strengthened by a further implication of the *environmental precept*: The precept starts off weak since, even if it is assumed that there is a duty to limit one's impact on the environment, a person who does not have any offspring may be less inclined to follow such duty. However, with every additional child that a couple has, the precept becomes stronger. This is because, as argued in the next paragraph, parents ought to procreate only if they fulfil risk-minimizing requirements that ensure that their child has good life prospects. Since every additional child puts more strain on the environment, parents act less risk-minimizing with each procreative act. This may lead to the precept becoming strong enough to disallow any further procreation at some point. An argument based on these insights to limit the number of permissible children (possibly to only one child) would take up more space than available and will be postponed in this thesis.

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distinctions between biological and trans-women and nonbinary people with an uterus, but this argumentation is valid for a person who ascribes themselves to any of those groups, given that they are able to experience pregnancy.

### 3.3.5. Risk and Reasons: Justification before the Child

Bringing a child into the world means that the parents expose an unconsenting individual, namely their child, to the harms of life. The parents must be justified in doing so. In the following paragraph, two necessary *risk-minimizing* requirements are formulated. If these requirements are met, parents are locally justified in their procreative intention. The first requirement is the need for *resources to ensure a good life*. Prospective parents must generally seek to limit unnecessary suffering and shortcomings by ensuring that their child will have the best life possible. In practice, this means that the parents should refrain from procreating if they know of any heritable diseases and disabilities that would significantly lower the child's quality of life. If the parents live in a world (or country) in which life is characterized by famine, war, violence, natural disasters, racism, or a hazardous environment, then they should reconsider procreating as the child's life may be too burdensome to be justifiable. Furthermore, prospective parents should ensure that they have enough resources to offer their child an appropriate upbringing in which all basic needs are met so that the child can develop as well as possible. As Wasserman (2015) puts it, "prospective parents should not create children they expect to have lives substantially harder or riskier than their own, or at least lives they would find unacceptable for themselves" (p. 166). This thesis goes further than Wasserman by claiming that prospective parents should only procreate if (a) it is to be expected<sup>11</sup> that their child will have a life as least as good as their own, and (b) if they themselves would, given the choice, also choose to be born into their current world, and (c) if they themselves would, given the choice, also choose to be born as their own children. These requirements ensure that prospective parents can offer the needed resources and the needed parental relationship, and that the child

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<sup>11</sup> Any child can get unlucky and have, against all odds, a tragically unhappy or otherwise painful life. Here, the concern lies on *what is to be expected*: If parents have all reason to expect that their child will lead a very good life and they enable the child to lead such a good life, yet the child is still extremely unhappy, then the act of procreation was still justified from the "outlook on life" requirement, even if a good life did not substantiate.



is born into an adequate world. Furthermore, considerations regarding climate change and its effects, as well as considerations about the society in which the child is born, are also considered. The clause ‘have a life at least as good as their own’ deserves more attention: While it is a strong demand, it ensures that, even though the considerations that are to be made for the first requirement are highly subjective, parents are forced to reflect on their quality of life and on their surroundings in a way that is relevant for the (future) child.

The second requirement is a *right reason*. Different reasons and justifications for having children were discussed by the example of the couples Jack, Jill, Ben, and Christine, but the quintessence will be formulated here again: Prospective parents ought to seek to have a child *as an end in and for itself*, with the goal of loving and nurturing the child and enabling it to live a good life *for its own sake*, and not merely as means to some end. If the prospective parents fulfil these two requirements, then they have sufficient *local* justification to bring a child into a possibly harmful existence, because the child’s existence can be assumed to be not too harmful and burdensome.

### 3.4. Justified Procreation

The *global* justification (i.e., the justification before others) of procreating and the *local* justification of procreating (i.e., justification before the child) are necessarily interconnected. Prospective parents may offer different arguments for wanting children, but unless there is the strong desire to experience *pregnancy*, they lack justification for procreation, as many of the wants and desires of parents are also met when adopting a child. If the prospective mother has the strong desire to experience pregnancy, then parents still must be able to justify their procreation before their (unborn) child, for which they must be able to provide resources for a good life as well as the right reasons to procreate. Procreation is morally permissible only if

these requirements are met, and if the procreative act is justifiable both locally and globally. This ensures that a morally significant act with implications for numerous people is well thought-out and well justified.

## 4. Conclusions, Appendices, and References

### 4.1. Summary

In this thesis, a variety of things were achieved: In the microeconomic part, Becker's model of household fertility and the quantity-quality trade-off were introduced to give a basic theoretical understanding of procreative decision-making in a microeconomic household. By showing the large cost of children as well as happiness levels before and after childbirth, two more implications regarding a broad definition of *microeconomics* were named to complete the microeconomic analysis. The macroeconomic part established that economically advanced countries with large human capital and low fertility rates may experience an economic downturn in the future, and that such countries may benefit from higher birth rates. In the philosophical part, an environmental precept to limit one's family size based on the environmental impact of humans in the Global North and on the notion of carbon impact was formulated. This precept was used to establish the concept of *global* justification as one requirement for morally permissive procreation. The concept of *local* justification was then defined by referring to the fact that children cannot consent to their birth which exposes the child to various harms. The discussion then turned to seeking valid justification for procreation. In this endeavour, the findings of the economic part of the thesis were criticised and their ability to provide sufficient justification was dismissed, and Kant's categorical imperative was used to show that any consequentialist justification, by itself, is not satisfactory. Being able to offer good life prospects and the wish to experience parenthood are then acknowledged as necessary,

but not sufficient justifications for procreation, not lastly because the possibility to adopt children allows prospective parents to achieve these goals without procreating. Lastly, the desire to experience pregnancy is argued to be a valid global justification to procreate, and two requirements that must be met to constitute a valid local justification are established. What emerged is a strong account that would oppose many procreative acts, that demands justification to a large extent, and that reaffirms the thesis '*Procreation in countries of the Global North must be extensively justified locally and globally in order to be morally defensible*'.

#### 4.2. Limitations of the Thesis

This thesis has three limitations. Firstly, the macroeconomic consequences of low birth rates in countries of the Global North have so far hardly been researched, so only few studies on this topic could be found and analysed. Secondly, the environmental precept and the argument for the need of global justification is grounded in the assumption that there is a duty to limit one's impact on the environment. While most people would probably agree that such duty exists, providing adequate reasoning for such a duty would go beyond the scope of this thesis. Thirdly, this thesis omitted anti-natalist arguments and standpoints. Anti-natalists hold that any form of procreation is morally wrong, and thus they oppose procreation altogether. While such positions were investigated and researched, elaborating on them was not possible due to space constraints.

#### 4.3. Outlooks

Two outlooks can be drawn from the results of this thesis, one for parents and a broader one for policy makers. Following the moral requirements made by this thesis would be a serious

commitment for prospective parents: It requires women to reflect on their desires to establish whether their wish for a child truly stems from the wish to experience pregnancy, and to abstain from procreation if this is not the case. It requires prospective parents to reflect on their reason for having a child, and to abstain from procreation if their would-be child would have been conceived merely as means to an end. It requires prospective parents to reflect whether they are able and willing to establish a nurturing and loving relationship with their child, and to abstain from procreation if they cannot do so. Lastly, it requires prospective parents to reflect on their living conditions and general environment, and to defer procreation if they cannot provide the child with the resources to ensure a reasonably good life, or to abstain from procreation altogether if life prospects are too bleak. In short: It *requires parents to provide local and global justifications*. These requirements are demanding and may lead to unwelcome results for prospective parents. As so often, morality is more demanding than most would appreciate.

As a more general outlook, an appeal to policymakers can be drawn from the findings of the economic part. Economic findings are always based on a model which necessarily utilizes simplified assumptions and variables within a (more or less) closed system model. In a world which is as globalized, as interconnected, as multi-faceted and as united in a struggle to tackle global problems as our current world, economic analysis seems to leave out large but important parts of the *whole picture*. When policy recommendations are made, they are made by taking specific data for a specific type of country into account (e.g. Global Northern countries): Policymakers use studies that show negative effects of too low birth rates for their country, and they address the problem of too low fertility by incentivizing births. Policymakers (in an entirely different department) use other studies to craft policies aimed at limiting the environmental impact of their country. This leads to countries pursuing ‘green’ policies while also incentivizing birth rates, essentially an oxymoron given the carbon impact of children in the Global North. A more holistic and cosmopolitan view that takes the environment and the fertility in other countries into account would be an approach to a country’s population and

fertility policy that could be morally sound and not inconsistent with its different policy goals. After all, while Global Northern countries struggle with too low fertility rates, there are plenty of countries that struggle with the exact opposite and whose citizens may not be unwilling to emigrate, given the right conditions. This insight – even if not an initial goal of this thesis – leads to an appeal which can be formulated, namely an appeal to a generally more holistic, interconnected, and cosmopolitan way of policymaking.

#### 4.4. Tables

Table 1: Databases, search engines, and Keywords used for the SLR

Databases and search engines used	Keywords used (in alphabetical order)
Jstor.org, Google Scholar, Sagepub	China one-child policy economic impact, Cost of low fertility, Economic growth fertility, Economic growth fertility, Economic impact on fertility, Economics of fertility, Effect of fertility on GDP, Fertility Europe economy, Fertility and wealth, Fertility cost of children, Fertility economic growth, Fertility impact on economics, Fertility macroeconomic impact, Impact of decreasing fertility, Incentivation of fertility, Income and fertility, One-child policy effects

Table 2: Databases, search engines, and Keywords used for the philosophical sources

Databases and search engines used	Keywords used (in alphabetical order)
Jstor.org, Google Scholar, Philpapers.org	Ethics of procreation, Morality of parenthood, Morality of procreation, Procreation and parenthood, Procreation cost of children, Procreation moral implications, Procreation moral permissibility, Procreation philosophical considerations, Procreation philosophy, Procreation theories

Table 3: Philosophical sources – Criteria for exclusion and inclusion

Inclusive criteria	Exclusive criteria
<p>Concerned with (morality of) procreation</p> <p>Concerned with permissibility of procreation</p>	<p>Concerned with procreation only as a sub-part of the work</p> <p>Concerned with ethics of assisted procreation</p> <p>Concerned with ethics of procreation in conjunction with medical issues (e.g., abortion of a child that would be born disabled) and other medical questions (such as procreation for the sake of having a “saviour sibling”)</p> <p>Concerned with rights to procreation</p> <p>Concerned with ethics of contraception and/or abortion</p> <p>Article in a language other than English</p>

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