



**Reproduction in the (m)Anthropocene:  
Exploring the roots and implications of environmentally friendly  
restrain from childbearing**

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### Abstract

This thesis departs from scientific literature which suggests to “have one fewer child” as the most effective individual lifestyle choice to reduce one’s contribution to (and even actively fight against) climate change. By employing critical discourse analysis of this literature, I explore how childbearing and carbon emissions have been coupled, and what the implications of this phenomenon are. Throughout this work I seek to show that quantifying an unborn child in emissions savings and suggesting to restrain from them must be understood in the socio-political and historical context which drives the individualization of climate causes and solutions; gives authority to “value-neutral” science to produce and naturalize reproductive recommendations; and ignores the patriarchal history of reproduction within capitalism. I essentially argue that “have one fewer child” conceals the gendered nature of reproduction in capitalism, accelerates the instrumental treatment of both childbearing and the climate crisis, and implies that female bodies and sexual life *should* serve a greater purpose and thus remain manageable. I also suggest that the latter is likely to get a grip in the (m)Anthropocene – a *human*-dominated era in which human has become the biggest threat.

**Keywords:** “Have one fewer child”, reproduction control, environmental individualization, gender and climate change, (m)Anthropocene

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# 1. Introduction and research questions

## 1.1. Introduction

The stream of charts, graphs and diagrams of “personal choices” one can make to “respond to climate change” increasingly floods our daily lives, with an expanding list of environmentally friendly activities. One particular choice which has gotten serious grip rather recently, it seems, is that of restraining oneself from having (more) children. This rather new environmentally friendly personal choice reached me a little while ago, but it has now also fully reached scientific literature. It was, for instance, clearly formulated and popularized by the study of Seth Wynes and Kimberly Nicholas (2017) called “*The climate mitigation gap: education and government recommendations miss the most effective individual actions*”, where “have one fewer child” is running up front of the “Personal choices to reduce your contribution to climate change” chart (Figure 1).

Just a simple search for “one fewer child climate change” on the internet gives various media articles from 2017-2019 with headlines such as: “*Having children is one of the most destructive things you can do to the environment, say researchers*”<sup>1</sup>, “*Want to fight climate change? Have fewer children*”<sup>2</sup>, “*More than 11,000 scientists have declared a ‘climate emergency.’ One of the best things we can do, they say, is have fewer children.*”<sup>3</sup>, and so on. Children, just like washing clothes in cold water, can apparently be measured in “emissions savings” (Wynes and Nicholas, 2017, p.4). Thus, among recycling, eating a plant-based diet and living car-free, one should now consider having one fewer child to save up the maximum of one’s emissions. When I compare having children to recycling in conversation to people around me in such way, it always brings laughter or at least raises a smile. One of the main reasons, I think, is that putting those things in one pot somehow sounds at least a little absurd. Yet the arguments of the researchers are simple and compelling – climate change “is the result of greenhouse gas accumulation in the atmosphere, which records the aggregation of billions of individual decisions”

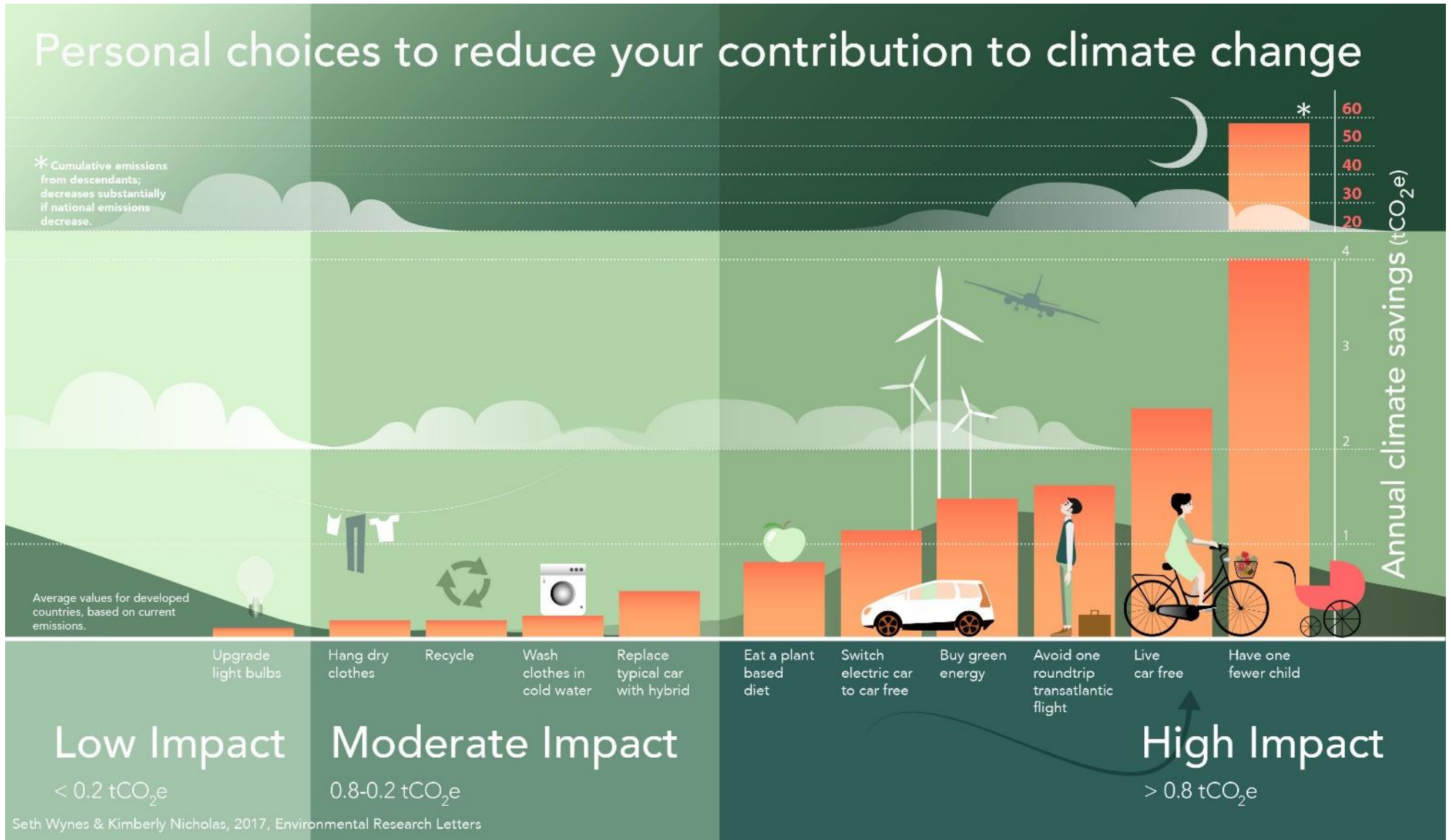
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<sup>1</sup> <https://www.independent.co.uk/environment/children-carbon-footprint-climate-change-damage-having-kids-research-a7837961.html>

<sup>2</sup> <https://www.theguardian.com/environment/2017/jul/12/want-to-fight-climate-change-have-fewer-children>

<sup>3</sup> <https://www.businessinsider.com/scientists-declare-climate-emergency-solutions-fewer-children-2019-11>

**Figure 1.** Personal choices to reduce your contribution to climate change. Data source Wynes and Nicholas (2017); image credit Jakobsson (2017).



(Wynes and Nicholas, 2017, p.1). Since we must reduce our carbon emissions as much as possible, as soon as possible, and raising a child does produce a whole lot of them, we need to think twice before having a (one more) child.

The main pillars such logics are built upon are not hard to notice with a plain eye and they reveal themselves quite clearly from the above quote. First, it bluntly asserts individual choices as both the cause of and the solution to climate change (personal yet something our common good – the environment – depends on). Second, it holds both that the climate crisis is mostly (if not solely) about the greenhouse gas accumulation in the atmosphere and, third, that it is directly linked to the amount of people (and their decisions-choices) in the world. Consequently, it treats a child as emissions release, which we need much less of, and an unborn child as emissions savings, which we need much more of. These assertions not only allow children and recycling to be put in one pot, but also somehow make it seem quite sensical. How this comes about, and the implications of such line of reasoning, will be the focus of this thesis.

## 1.2. The aim and research questions

A lifestyle choice of having one fewer child in the abovementioned article seems to hold equal accessibility to such choice for any individual across, and likely beyond, the “developed regions”. If we take a closer look at Figure 1, we will notice, as such charts go, that many of the choices (even if of smaller impact) are a matter of a household. Historically having formed as a female terrain, the household seems to have become a space of environmental choices *our common good* depends on. Even more significantly, this female terrain was historically tied with procreation, which the chart suggests shifting away from. These are just some of the reasons inviting to deconstruct “have one fewer child” as an environmental solution, especially through the lenses of gender.

In this thesis, I firstly **aim** to examine the context under which restraint from children have entered scientific environmentally-friendly-choice charts and children became potentially “the most destructive thing” one can do to the environment. I further **aim** to analyze the gendered implications of such phenomenon, especially for females, given the history of reproduction and



their traditional association with the household (and the making of household choices). I finally aim to explore what such an articulation of (not) having children implies for the way we perceive the climate crisis and its solutions in the so-called Anthropocene.

The main **research questions** are:

1. **How did “have one fewer child” become the most effective environmentally friendly lifestyle choice?** What are the circumstances under which this phenomenon “makes sense” and what does it imply?
2. **What does “have one fewer child” as an environmentally friendly choice imply for females, traditionally associated with the household and reproduction?** What does such an articulation of (not) bearing children mean for our general understanding of the climate crisis and the ways to go about it? How can we understand “have one fewer child” in the so-proclaimed era of the human?

The overarching **purpose** of this thesis is to articulate the complexity and the dangers of seemingly simple and logical environmental solutions, and, more specifically, to expose a set of assumptions and politics that underlie prevailing gender relations in climate change debates. Research on the intersections of gender and climate change has focused a lot on the material impacts of climate change on women in the Global South, and much less on “the gendered power relations and discursive framings that shape *climate politics*” (MacGregor, 2010, p.224, emphasis in original). And the knowledge and discourses regarding sex and reproduction “are deeply invested in questions of power, authority, and sovereignty” (Sasser, 2018, p.16). Contextualizing such discursive framings and exposing their underlying assumptions is what this work essentially does.

Looking into what underlies “have one fewer child”, I believe, is ever more relevant given the defining notion of our times – the Anthropocene. Within this new geological era, it is claimed that the mankind has punted the planet out of 10,000 years of relative stability, and that the universal human holds the responsibility of the deepening crisis (Di Chiro, 2017, p.488). The Anthropocene was not created equally, many authors note, but made “by a specific subset of humans, namely, those on the frontlines of modernization: white, wealthy, rich males of European heritage” (Dyett and Thomas, 2019, p.219). This thesis attempts to articulate what childbearing,

framed as one of the most destructive things for the environment, can mean in the Anthropocene – a human epoch concealing deep divisions and inequalities of sex, race, geography, and class (ibid.). The changing views and approaches to climate change and its solutions also shift our understanding of both human nature and human-nature relations, which is particularly significant as the *Anthropos* era illustrates and intensifies “a profound separation or disentanglement of humanity from nature” (Hamilton, 2017, p.580).

## 2. Methodology

### 2.1. Delineating the scope

The temporal dimension of the thesis’ object is worth noting in two respects. First, it is the traceability of *when* having children became potentially the most destructive thing one can do to the environment. Even though the association of not having children with caring for the environment is not entirely new, I choose to depart from a scientific article written in 2017 as a meeting point of specific elements that make it logical both in scientific and common-sense terms. It is not to say that “this is when it all begins”, but the exact timeline is not of interest of this work. Second, it is the question of how deep in time we need to look into, in order to understand *how* having children became potentially the most destructive thing one can do to the environment and what that implies. Since drawing on Marxist-feminism in this thesis quite significantly, I believe that the historic formation of capitalist relations and what happens during that time – roughly, the sexual division of labor and the rising state/capital interest in controlling reproduction – is necessary to contextualize the analyzed phenomenon. I will thus lean on Marxist-feminist literature which starts even with the 16<sup>th</sup> and 17<sup>th</sup> century witch-hunts and early capitalist developments (Federici, 2014; 2018). My goal, again, is not to offer a genealogy, but to investigate the qualitative historical-theoretical arguments and suggest an understanding of the phenomenon. I do not aim to “exhaust” the topic or provide definite answers, nor do I aim to summarize all the historical evidence and literature around it, but, as just mentioned, to offer an explanation on how the specific elements meet at this very article. My focus will be mostly on the literature which

touches upon the intersections of capitalism, liberalism, state, household and reproduction, with particular attention to gender and its relation to the environmental crisis.

Another point worth mentioning is the geographical delineation. Historical developments I use in my argument are of course context-specific, but I do not delineate the geographical area of my study as I depart from texts. The latter ones do have their origins in North America and partly Sweden, they claim to be about “developed regions”, and their intention is to reach as big of an audience as possible. It is thus important to again articulate that my task is to deconstruct and contextualize these texts in socio-political and historical contexts.

## 2.2. Methodological approach

By aiming to explore the context of the recommendation of having one fewer child and the implications of this discourse to the material world, I hold the position that discourses do materialize and have very real, material effects. Discourses – ensemble(s) of ideas, concepts, and categories through which meaning is given to phenomena – provide the tools for constructing both the problems and the context in which these problems are understood (Hajer, 1993 cited in Sasser, 2018, pp.11-12). Thinking through this with regards to having or not having children necessitates an analysis of questions related to gender (roles), norms, expectations and inequalities, “all of which impact environmental discourses, policies, rights, and access to resources” (Sasser, 2018, p.12).

Discourse in this thesis is understood as a kind of grammar that mediates any kind of contact with reality (Laclau and Bhaskar, 1998, p.9). Importantly for this work, discourse is not simply constative, for “the *performative* dimension is inherent to any linguistic operation” (ibid., emphasis added); it is a form of practice which both “*constitutes* the social world and is *constituted* by other social practices” (Jørgensen and Phillips, 2002, p.61, emphasis in original). That is not to claim that discourse is all there is, but to emphasize the performativity and thus materiality of discourse. Leaving the discussion on *what is* aside, I believe, as critical realists do, in the irreducibility of the real to discourse and “in the possibility and actuality of a world without human beings, and therefore without discourse” (Laclau and Bhaskar, 1998, p.11).

I at the same time hold that there is an incremental value in looking into the historical development in order to understand what current phenomena stand on. This consequently implies causal links between the phenomenon being studied and certain historical circumstances related to the phenomenon, otherwise called historical causation (Levitsky and Way, 2015, p.101). As much as historical data is “saturated by the power of discourse blocking the sight” (Malm, 2018, p.15), I hold that it has a “material substratum” (ibid.) and believe in the validity of historical arguments.

### 2.3. Methods

In order to understand how “one fewer child” makes sense and the implications of its inscribed assumptions, I conduct **critical discourse analysis** (CDA) of the aforementioned article, a release of FAQ’s on the article, the two responses by the authors to the criticism of the article, and their press release article in The Guardian (with some additional material, see Table 1). Discourse analysis is needed to capture not simply what is explicitly being said, but what underlies that of what is being said (as well as what is not said) and with what effects (Carabine, 2001, p.267). Generally being a study of talk and texts (Taylor, 2001, p.i), discourse analysis helps to attend to the process of normalization and naturalization by looking into what (and how) the language is used (Edley, 2001, p.190). Importantly, language here is considered the means through which meaning is not only transmitted and conveyed, but also *created* over time (Taylor, 2003, p.6, emphasis added). By looking into what is conveyed and created by the chart (Figure 1), I am also interested in whose interests are potentially favored by the discursive formulations around it (Edley, 2001, p.190).

“Critical” in CDA signifies an intention to reveal how discursive practice maintains the social world, particularly those social relations “that involve unequal relations of power” (Jørgensen and Phillips, 2002, p.63). Besides having an explicitly critical stance towards the texts I analyze, I am attempting to uncover what is implicit in their discursively enacted underlying ideologies (van Dijk, 1995, pp.17-18). Much work in CDA deals with exposing the legitimated structures of dominance, particularly in relationships of class, gender, ethnicity, race, sexual orientation, language, religion, age, nationality, or world-region (ibid., p.18). The case of this thesis, I believe,

**Table 1.** List of material for critical discourse analysis<sup>4</sup>

|          | <b>Name of the article/material</b>  | <b>Throughout the text referred as:</b> |
|----------|--|---|
| <b>1</b> | Wynes, S. and Nicholas, K.A. 2017. The climate mitigation gap: education and government recommendations miss the most effective individual actions. <i>Environmental Research Letters</i> 12(7), pp.1-9.                           | The main article                        |
| <b>2</b> | Wynes, S. and Nicholas, K.A. 2018. Reply to Comment on ‘The climate mitigation gap: education and government recommendations miss the most effective individual actions’. <i>Environmental Research Letters</i> 13, pp.1-3.        | Reply to the 1 <sup>st</sup> comment    |
| <b>3</b> | Wynes, S. and Nicholas, K.A. 2018. Reply to Second comment on ‘The climate mitigation gap: education and government recommendations miss the most effective individual actions’. <i>Environmental Research Letters</i> 13, pp.1-3. | Reply to the 2 <sup>nd</sup> comment    |
| <b>4</b> | FAQ’s for Wynes & Nicholas 2017, pp.1-14.<br><a href="http://www.kimnicholas.com/uploads/2/5/7/6/25766487/faqs_2.pdf">http://www.kimnicholas.com/uploads/2/5/7/6/25766487/faqs_2.pdf</a>   | FAQ’s                                   |
| <b>5</b> | Press release of the main article on The Guardian, called “Want to fight climate change? Have fewer children”  | The Guardian article                    |
| <b>6</b> | Murtaugh, P.A. and Schlax, M.G., 2009. Reproduction and the carbon legacies of individuals. <i>Global Environmental Change</i> 19, pp.14–20  | (Murtaugh and Schlax, 2009)             |
| <b>7</b> | Additional material from K. Nicholas web-page (for example, Figure 1):<br><a href="http://www.kimnicholas.com/">http://www.kimnicholas.com/</a>  |   |

is exactly about the interrelations of culture and power within climate change discourses, and its discursive reproduction of dominance and inequality. It is important to have in mind that the main research paper was produced in Lund University Centre for Sustainability Studies – a quite well-known study centre for its strong sustainability profile. There Seth Wynes did a master’s program in Sustainable Science and Kimberly Nicholas is an associate professor of Sustainability Science. Both authors are originally from North America.

Departing from CDA, I further undertake a form of **qualitative historical analysis** (Thies, 2002) **of secondary historical sources**. This is, most of all, to suggest that there is historical causation (Levitsky and Way, 2015, p.101) to the fact of “one fewer child” being up front of the chart. The interest of my analysis is not in manifest events, referring to those events that contemporaries were clearly aware of as they occurred (Thies, 2002, p.353) and thus are seemingly more factual. I am interested in the ideological, philosophical, social developments, as well as

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<sup>4</sup> All quotes from the analyzed material are throughout the text presented in *Italics*.

theoretical and political arguments based on historical research, and thus will not myself conduct any analysis of primary historical sources. Fully aware of the bias and selectivity of those who did study primary historical sources (ibid., p.359), I acknowledge the ideological stances of referred researchers. The process therefore shall be viewed as an exercise of situating and contextualizing the analyzed phenomenon with the help of historical arguments.

#### 2.4. Positionality and ethical considerations

As already stated, a significant chunk of my analysis will be facilitated by Marxist-feminist concepts and literature. I do so consciously both because I consider myself a feminist and because I believe the topic raises feminist questions. Coming with such lenses prior to conducting research and analysis is often considered as bias – as an adoption of a perspective which makes particular things more salient and others less visible (Hammersley and Gomm, 1997). While taking into account the dangers of over-emphasizing certain perspectives and consequently silencing others, I consider my initial standpoint as an asset that can *open up* (rather than limit) different perspectives. I therefore acknowledge my feminist lenses beforehand and treat them as a useful tool to better unravel the phenomenon at stake.

Although I will not be doing research with the actual people, I am departing from an article which I am highly critical of and which was written by two researchers, both of whom are linked with Lund University. It is most important to note that I am very passionate about the topic and feel the need to use what might come off as stronger language sometimes. This by no means intends to target the people who published the study personally. Nothing here is directed to the researchers themselves as persons, but refers to the structural setting and the context they represent. I do very much acknowledge their good intention for the environment, but it is essential to critically reflect beyond intentions, and hopefully what follows is inviting to do exactly so.

It must be acknowledged that this work is partial and of limited scope, as a more comprehensive account would require the depth and the breadth of the historical evidence. Given these limitations, it nevertheless offers a significant ground for further research on this topic.

### 3. Theoretical background

In this chapter, I outline the theoretical context of the more visible components of “have one fewer child”, the combination of which, I suggest in the analysis, facilitates the normalization of the very idea. As already mentioned, those are: the assertion that individual choices are forms of environmental solutions; the idea that the size of the population is directly linked to environmental degradation; and the assertion that the climate crisis is best (if not solely) defined by the amount of CO<sub>2</sub> in the atmosphere. Because a big part of my analysis consists of looking into the socio-political and historical developments to contextualize the phenomenon, in the last section of this chapter I concisely outline the very key concepts to be used: reproduction (in relation to production), willed pregnancy and the (m)Anthropocene.

#### 3.1. Neoliberalism and individualization of environmental problems

The shift from collective politics to individual “action” (or purchase) has been widely addressed in academic literature and has mostly been associated with the umbrella of “neoliberalism” (Maniates, 2001; Giroux, 2005; Brown, 2006). The wide-use and the vagueness of the term continues to receive criticism, yet there are many significant developments that the notion encapsulates. Neoliberalism, Brown (2006, p.693) claims, is commonly roughly considered as a set of free market economic policies that, first, dismantle welfare states and privatize public services in the Global North, second, make wreckage of efforts at democratic sovereignty or economic self-direction in the Global South, and third, intensify income disparities everywhere. Yet, the author argues, it must be conceived of as something more than that. Even though neoliberal political rationality is based on a specific conception of the market, the way it organizes governance and the social “is not merely the result of leakage from the economic to other spheres but rather of the explicit imposition of a particular form of market rationality on these spheres” (Brown, 2006, p.693). Thus, according to Giroux (2005, p.2), led by a belief that the market rationality “should be the organizing principle for all political, social, and economic decisions”,

neoliberalism wages a constant “attack on democracy, public goods, and non-commodified values”, and increasingly turns citizenship to a function of consumerism.

In the context of “*current anthropogenic climate change*” (The main article, p.1), “lifestyle choice” is explicitly linked with responsibility for saving (and causing) climate change. Maniates (2001, p.33) claims that there are several forces to blame for such individualization of responsibility within environmentalism, which include “the core tenets of liberalism, the dynamic ability of capitalism to commodify dissent, and the relatively recent rise of global environmental threats to human prosperity”. In the U.S., for instance, the major shift took place during the ‘80s, when politically conservative forces promoted the returning power and responsibility to the individual, “while simultaneously curtailing the role of government in an economy that was increasingly characterized as innately self-regulating and efficient” (ibid., p.39). The author suggests that this shift to individual consumers was consistent with Reagan’s doctrine of personal responsibility, corporate initiative, and limited government. It is by no means a sole and all-defining factor that cemented individual responsibility as a logical environmental solution, yet was one of the major political developments that made consumption-as-solution seem sensible way beyond the U.S. The 1998 Human Development Report of the United Nations, the author gives an example, marked a first time that “a major institutional actor in the struggle for global environmental sustainability has made consumption a top policy priority” (ibid., p.46).

That it is quite inaccurate and unfair “to coerce people into believing that they are personally responsible for the present-day ecological dangers” (Bookchin, 1989, p.5) was already articulated in 1989 in the famous piece “Death of a Small planet” by the American social theorist Murray Bookchin. If, the theorist writes, “simple living” and “militant recycling are the main solutions to the environmental casts, the crisis will certainly continue and intensify” (ibid., p.5). Shortly after, Sandilands (1993) proposed a similar argument with an additional angle. The author spoke of environmental privatization as a rise of “green” consumerism, which turned politics into actions such as “squashing tin cans”, morality into “not buying over packaged muffins”, and environmentalism into “taking your own cloth bag to the grocery store” (Sandilands, 1993, p.46). What the author added to the discussion was that because the household was traditionally perceived a women’s terrain, and because this was where environmental changes were seen to occur, it became an extra burden and even a requirement for women to live up to (ibid., p.47).



From this perspective, then, having one fewer child could be theorized as an extra item on the “things-to-do” list of an environmentally friendly woman, but this is, I believe, just the very surface of the female burden. There is definitely more to say when “militant recycling” is accompanied by having less children.

There is no surprise, it then seems, that we find ourselves looking at the “personal choices to reduce your contribution to climate change” chart, as it has become *normal* that the individual action is declared as contribution or reduction of damage. Many readers will perhaps be familiar with the individual-focused discourse and commodified actions soaking up environmental politics, but the pervasiveness of this individual consumer choice model is worth emphasizing. It deeply informs cultural ideas about morality, individualism, and personal responsibility in many ways – “including how we think about reproduction and environmentalism” (Sasser, 2018, p.6), which is part of what I examine in the thesis.

### 3.2. Population management as an environmental solution

An explicit recommendation to have less children also holds a direct link between the amount of people in the world and the environmental degradation. While population-environmental linkages seem undeniably common sense, what I essentially depart from in this thesis is that these ideas are “heavily shaped by the assertions of scientists and environmentalists, many of whose ideas were historically shaped by social and political concerns” (Sasser, 2018, p.50).

There is no simple linear answer onto how this link was historically established as self-evident, but there are many traceable and tangible elements which contributed to it. The idea is based on the famous “law of population” popularized by an English cleric and political economist Thomas Malthus, which reads that “population, when unchecked, increased in a geometrical ratio, and subsistence for man in an arithmetical ratio” (Malthus, 1998[1798], p.6). The establishment of a direct, mathematical link between population size and the exhaustion of resources, i.e. degrading environment, is normally attributed to this influential English figure. To put it very simply, Malthusian argument suggests that society should assist in suppressing the rate at which people in poverty procreate in order to avoid exceeding the what is called Earth’s carrying capacity

(Dyett and Thomas, 2019, p.212). This was built on a simple observation, as the quote shows, that the population grows exponentially while agriculture (and food production) grow at significantly slower rates.

Malthus did certainly not come up with this idea in a vacuum and its assumptions were hardly “value-neutral”, which will be discussed at more length under my attempt to historically contextualize “have one fewer child” later on. Noteworthy here is that ever since population was perceived as a bounded subject of inquiry, it was situated within questions of state and territory governance, international security, and the search for an optimal balance of resources to meet the basic needs of members of society (Sasser, 2018, p.51), which were all efforts “to identify the basic blueprint of the ideal state” (ibid., p.52). Thus, ideas about population and its management of any kind are tightly linked with state’s interest, the power of which has historically always in some form depended on defining normative families (Ginsburg and Rapp, 1991, p.314).

Essential to note here is that human population growth as a major threat to the planet has seen major revival within the environmental crisis debates (Sasser, 2018; Dyett and Thomas, 2019). This “key issue” has been strongly advocated by so called neo-Malthusians for decades now, and articulated as the main driver of environmental, social and economic problems (Sasser, 2018, p.1). While blaming human numbers for everything from “deforestation to air pollution, global poverty, civil unrest, international migration, and now climate change” (ibid.), neo-Malthusian proponents continue to posit these problems as a *natural* function and result of human population growth (Sasser, 2018, p.2, emphasis added). Neo-Malthusians highly favor the idea of preventive birth control not through coercion, but through voluntary access (ibid., p.20) or, potentially, through individual lifestyle choice.

The revival of neo-Malthusianism has been highly facilitated by the historical (but now also often taken for granted) notion of Earth’s carrying capacity. It is based on the idea that people around the globe share “a limited living space characterized by constraint and crowdedness” (Sasser, 2018, p.67), and has become a core scientific concept regarding population-environment relation (ibid.). Just like the general populationist assertion, carrying capacity is informed by ideological inclinations rather than eco-systemic givens – critical feminist analysis of factors contributing to population size has shown that many are built on false assumptions about human impact on the environment and even relate to various forms of oppression (Cuomo, 1994 cited in

Nhanenge, 2011, p.427). Neo-Malthusian rhetoric has continuously adopted hegemonic discourses “subtly laced with racist and sexist undertones” (Dyett and Thomas, 2019, p.206) as they most often make “women of color in the Global South the agent primarily responsible for changing our present reality, subtly implying that they share a considerable part of the blame” (ibid., p.218). Most importantly for this work, the pervasiveness of “the law of population” and earth’s limits naturalized the idea that populations *should* be managed, which implies that reproductive practices should, too.

### 3.3. The politics of carbon

Another important element of having less children for the environment is the assertion that climate change essentially results from greenhouse gas accumulation in the atmosphere. While it does, there has been such a focus on carbon “that it has become removed from its environmental and social (and even climate) context” (Moolna, 2012, p.1). This is perhaps what also facilitates a rather new mathematical link between childbearing and amounts of carbon emissions.

The focus on carbon is claimed to be easily favored by politicians “perhaps because it replaces the irreducible complexity of global climate dynamics” and also by businesses because “it allows the commodification essential to making climate tradable” (Moolna, 2012, p.1), and is part of a longer history of market-based environmental policies (Goodman and Boyd, 2011, p.104). What underlies the attempts to incorporate carbon into the economic equation is that “climate change is a result of market failure due to an abuse of market power and inadequate internalization of externalities” (ibid.). If we take that as a basis, it then makes perfect sense “not to abandon markets, but to act directly to fix [them], through taxes, other forms of price correction, or regulation” (Stern, 2009 in Goodman and Boyd, 2011, p.104). Turner (2014, p.74) has demonstrated that there is an intrinsic relationship between the underlying processes of carbon accounting and potential policy strategies. It is so because carbon counting has implications for, first, how actors (consumers, nation-states, etc.) approach the mitigation of emissions, and second, the allocation of responsibility for climate change (ibid., pp.74-75).

Counting carbon does contribute to making the environmental crisis more tangible and, consequently, manageable (Goodman and Boyd, 2011, p.105). Yet in the current “neoliberal” setting, measuring carbon allows for climate change to be managed “through market mechanisms and signals embedded in the price of a tonne of carbon emitted and/or price of carbon sequestered” (ibid.). While acquiring a somewhat “social life” (Appadurai, 1986) in the market, it is essentially depoliticized, freed from history and geography of carbon emissions. Yet the detachment from context is even *necessary* if carbon is to be traded as a commodity within a market (Moolna, 2012, p.2).

In environmental science literature, such as Wynes and Nicholas are producing, carbon now seems both to represent the ultimate enemy and to define a human. In the thesis, I am interested in the depoliticization and commodification of carbon as part of normalizing “have one fewer child”, yet also in the implications of coupling childbearing with carbon emissions, particularly for that part of the population who own wombs and more directly “produce” these emissions.

#### 3.4. (Re)production, willed pregnancy and the female in the (m)Anthropocene

Reproduction is made possible as an object of study and intervention through “the power relations governing knowledge production, surveillance, and management of populations and bodies” (Sasser, 2018, p.16). Departing from scientific texts as powerful forms of knowledge, I hold that it is essential to look into “the social and political contexts within which scientific knowledge is produced, and within which it continues to be deeply entangled” (ibid., p.17). Along with scholars of women’s history, I hold that state (patriarchal) control over reproduction is in various ways important for the maintenance of a dominant class and gender structure (Diduck, 1993, p.467). Such control can (and does) take the form of “ideological and legislative imperatives” which require specific women’s role in society, often that of bearers and rearers of “fit” children (ibid.). Dominant climate change discourses, moreover, construct the issue as a scientific, gender neutral problem, thus obscuring significant gendered dimensions of it (MacGregor, 2010, p.224). Although the female role is perhaps redefined by the promotion of

restrain from bearing children, it is significant for this thesis that such scientific account on reproduction does hold ideological imperatives towards females.

Guided by Marxist-feminism, I also employ the term “reproduction” in an analytical sense as it “reveals all the original sins of the capitalist mode of production” (Costa, 2004 [1994], p.1). What Marxist scholarship refers to as social reproduction is the indeterminate “stuff” of everyday life, which unfolds in dialectical relation with production, is both mutually constitutive and in tension with it (Katz, 2001, p.711). Social reproduction hinges upon the generational and everyday biological reproduction of the labor force, “through the acquisition and distribution of the means of existence, including food, shelter, clothing, and health care” (ibid.). It is more than this for that it also encompasses “the reproduction of labor force at a certain (and fluid) level of differentiation and expertise” (ibid.). (Re)production is accompanied by the notion of the gendered division of labor. Although highly historically and geographically contingent, the division commonly presumes women’s responsibility for most of the work of reproduction, which includes not only child rearing but other things of homemaking (ibid., pp.712-713). Acknowledging that these terms have been criticized for their ethnocentricity, mostly for the imposition of the cultural categories of capitalist societies onto other contexts (Ginsburg and Rapp, 1991, p.313), I believe they are important tools to expose the implications of dealing with reproduction within capitalism. The common assumption is that when the household and reproductive labor are integrated, they exist “at arm’s length from, or even outside of, broader social relations of production” (LeBaron, 2010, p.890). Yet it is crucial for this thesis that households in neoliberal capitalism do not exist outside of capitalist social relations (ibid.).

Science, modernization, and capitalism have long directly tied ideas of nation, state and progress to sexual conduct and reproduction (Sasser, 2018, p.16). These are all tightly linked to liberal theory and the formation of a liberal, rational, self-controlling individual (Ruhl, 1999; 2002). According to Ruhl (2002) there is an important shift in liberal theory, when responsible procreation is made part of this individual, thus incorporating control over one’s biological functions into the liberal agenda. What encapsulates this shift is the paradigm of willed pregnancy, which the author calls liberal governance, as it heavily relies on individual self-regulation guided by larger interests. I lean on the notion of willed pregnancy in this work to illuminate the kind of *individual* that underlies the suggestion to restrain from childbearing.

Scholars of women's history long argued that discourses of law, medicine, science and technology are embedded in a construction of pregnancy and reproduction which comes from an outside, male standpoint (Diduck, 1993, p.471). Contemporary environmental science discourse is now dominated by the idea of a new epoch – the Anthropocene – offering grim assertions about human-environment condition. Primary spokespersons, decision makers, and pontificators in spheres of climate science, economics, and politics remain to be mostly white, upper class men, and the members of The Anthropocene Working Group are no exception (Di Chiro, 2017, p.488). This is already a good enough reason to instead call this new geological epoch the *Manthropocene*, but in this work I use it as an apex of the history of “the gendered, racialized, and exploitative global capitalist system that is driving ecological and climatological destruction” (ibid., p.489). Its origins are embedded in such a setting:

The European, bourgeois, colonial, modern man became a subject/agent, fit for rule, for public life and ruling, a being of civilization, heterosexual, Christian, a being of mind and reason. The European bourgeois woman was not understood as his complement, but as someone who reproduced race and capital through her sexual purity, passivity, and being home-bound in the service of the white, European, bourgeois man. (Lugones, 2010, p.743)

I hold that the Anthropocene is a powerful notion actively concealing this history, which is why I feel it necessary to reflect upon the scientific incentive of environmentally friendly restraint from children within it.

Since dealing quite some with “gender”, it is important to note that by it I refer to hegemonic constructions of masculinity and femininity (MacGregor, 2010, p.224). With Marxist-feminists, I hold that gender is structural, historical and material, and as a social category (similarly to class) is characterized by relations of domination and oppression (Seneviratne, 2018, p.190). I also hold that the materiality of the body is particularly significant in exploring the topic of childbearing, and I use the term “female” in my work to signify that. Throughout the text, the category of “women” also shows up when used as such in academic literature. I refer to this notion aware of its totalizing inclinations and fully stand with postcolonial feminist theorists who raise

questions whether women can be conceptualized as unified subjectivists easily located in this category (Seneviratne, 2018, p.187).

This, I consider, sets both the theoretical departure and the conceptual scene for further investigation into the case in focus and the historical context of what it entails.

## 4. “Want to fight climate change? Have fewer children”

In this chapter I analyze the material from the three main pillars outlined above which make “have one fewer child” particularly sensical: “lifestyle choices” as the cause of and the solution to environmental crisis, population growth as directly linked to environmental degradation, and CO<sub>2</sub> as the defining measure of both the climate crisis and human life. The basis of this chapter is critical discourse analysis, with the help of which I expose what underlies environmentally friendly restraint from children.

### 4.1. How individual lifestyle choices caused and can save climate change

Perhaps the first thing that the introductory chart (Figure 1) transmits is that you, individual reader, can do your part for the climate. Under this section, I show how individualized the approach of saving the climate is in the analyzed material, and how instrumental is the authors’ view on both the climate and childbearing.

From the first sentences of the main article’s abstract we learn that individual lifestyle choices are both the cause of and the solution to the environmental crisis:

*“Current anthropogenic **climate change is the result** of greenhouse gas accumulation in the atmosphere, which records the aggregation of **billions of individual decisions**. Here we consider a broad range of **individual lifestyle choices** and calculate **their potential to reduce** greenhouse gas emissions in developed countries ....”* (The main article, p.1)

The rhetoric implies an *active* ability of these choices to reduce emissions, with expressions such as “*potential to reduce GHGs emissions*”, “*are of substantial magnitude*”, “*effective in reducing an individual’s GHGs emissions*”, “*make the biggest difference for the climate*”, and so on. The active element is especially exaggerated in The Guardian article, where having fewer children is explicitly called “*fighting climate change*” and having “*by far the biggest ultimate impact*”. I shall come back to the deeper implications of the latter in the next chapter.

Since the authors of “have one fewer child” have been asked about the necessity of putting so much importance on the individual action, they admit that it “*won’t be enough*” (Reply to the 2<sup>nd</sup> comment). The reason why they still hold on to the idea is that it all matters for the climate, and that they personally encountered high demand from people wanting to learn about their possibilities to contribute. The authors also add that there is abundant research done on other levels (such as the city, nation, region, sector, private actors) already. They claim that individual choice is simply complementary to other possible actions “*to contribute to meaningful climate mitigation*” (Reply to the 1<sup>st</sup> comment, p.3), as well as see personal, professional and collective actions “*as often mutually reinforcing rather than contradictory*” (Reply to the 2<sup>nd</sup> comment, p.2). The narrative that “it all matters for climate” and thus all actions are complementary is the narrative of neoliberal capital as it legitimizes the commodification of environmental care. The very attitude that individual consumers, just like companies and governments, are responsible for causing and addressing climate change instead contributes to maintaining the social license of the fossil fuel industry (Appadurai, 2019). Even if the suggestion to “live car free” in the chart (Figure 1) was not shortly followed by “buy more efficient car”, it in any case promotes individualized responsibility and commodified “contribution”, which actively distracts from any form of collective action.

“Have one fewer child” enjoys the top spot of this individualized and commodified contribution chart, more subtly called “lifestyle choices”. There is no consideration throughout the whole analyzed material that childbearing is a somewhat different activity than any other lifestyle choice. The only difference, as answered in the reply to the 2<sup>nd</sup> comment, is that family planning is *deeply* personal. This is of very little help as it continues to be presented as the number one high-impact individual action alongside buying green energy and eating a plant-based diet. Moreover, the amount of CO<sub>2</sub> a child “saves” is calculated based on the lifestyle patterns of their parents (and



grandparents)<sup>5</sup>, which both reduces children to a conglomeration of their parent’s daily (consumption) activities and makes parents inherently responsible for their children’s lifestyles. The latter also implies that lifestyles are static and transmitted through generations, which is rather contradictory with the authors’ intention to change the behavior of adolescents through textbooks. On top of that, treating childbearing as a lifestyle choice implies that procreation is inherently a thought-through decision, and that everyone (at least in developed regions) simply has such choice at their disposal at all times. Given criticism on ethics and the right to family planning, the authors respond that:

*“while the ‘universal access to sexual and reproductive health and reproductive rights’ ... is far from met today, these **preconditions for family planning are most widely achieved in the developed countries** where we focused our study.”* (Reply to the 1<sup>st</sup> comment, p.2).

Current political climate in the U.S., though, shows that these preconditions can be reduced even in one of the “most developed” countries<sup>6</sup>. When asked about allocating responsibility over climate change, the authors respond that it is ultimately an ethical question, yet go on to say that it is a particularly difficult task because of the long lifetime of greenhouse gases in the atmosphere – implying that the ethics are about the uncertainty of carbon measurements. The authors do emphasize that climate change is, of course, not *only* an individual issue, but that they share the fundamental ethical conclusion reached in the Paris Agreement, which reads that “*climate change is a problem for everyone on Earth, and everyone bears some responsibility for solving it.*” (Reply to the 1<sup>st</sup> comment, p.3). Such all-inclusive language can already be observed in the 1992 Earth Summit, which declares “all of us needing to work together to solve global problems” (Maniates, 2001, p.43). It alludes to putting the blame for environmental problems onto “human nature”, or “all of us” (Maniates, 2001, p.43), and neglects that the ethics of responsibility lies in the history and geography of power.

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<sup>5</sup> The calculation of unborn child’s CO<sub>2</sub> emissions savings will be elaborated on under 5.3. section.

<sup>6</sup> In 2019 the Trump administration banned recipients of Title X funds (which subsidize birth control and other medical care for low-income patients) from referring patients to abortion services, leading many clinics not being eligible for funding. This threatens low-income women from getting affordable reproductive health care. (See, for instance: <https://www.nytimes.com/2019/03/29/us/politics/trump-grant-abortion.html>)

Reducing the causes of environmental problems to poor individual choices leaves no room for understanding structural, political, and economic drivers of the climate crisis (Sasser, 2018, p.10). But that does not seem to be the goal of the analyzed material, as it promotes radical individualization of environmental responsibility which legitimizes and conceals those very drivers. The proliferation of it is what contributes to having fewer children becoming a logical environmental solution, as it is turned into a lifestyle choice and is presumably available to most.

#### 4.2. Population will continue to be a multiplier of emissions

The focus on the individual choice in the material has several other companions that support one another. The first one is the overwhelming emphasis on the amount of people in the world as the direct cause of environmental degradation, which is to be at the center of this section. Concern with population growth is implicitly evident through the recommendation to create less descendants, but its direct link with CO<sub>2</sub> emissions increase (degrading environment) is also spelled out explicitly:

*“until the emissions associated with desired services are reduced to zero, **population will continue to be a multiplier of emissions**”* (The main article, p.4)

Now, it is evidently hard to argue that individuals do not emit through their “lifestyles”, which I am not intending to do. My intention is to show how strongly the population-environment link is established, how logical it makes the recommendation to restrain from childbearing, and to already suggest that it is far from self-evident and neutral. When responding to the criticism questioning the focus on the number of people as the key multiplier of emissions, the authors agree that the amount of emissions is also tied to other factors. However, they write,

*“historical data show that the two **major drivers in the increase in global emissions from 1970-2010 were population and GDP**. Thus, it is not only the energy systems and the consumption patterns that are pursued, but also **the number of people pursuing them that matters for climate change**”*. (Reply to the 1<sup>st</sup> comment, p.1).

Concerns with population size and our common good (however defined) have historically been tightly linked with the state, as Malthus generously contributed to the very birth of demography (Szreter, Sholkamy and Dharmalingam, 2004). Neo-Malthusianism seemingly moves away from intentions of coercive population control and advocates “handling” the growth of the poor population by large-scale birth control and family planning (Dyett and Thomas, 2019, p.213). While “individual lifestyle choice” implies the voluntary nature of any choice, the explicit intention is that these choices reach not only wide audiences, but also governmental and school material as recommendations. The authors do not intend to prescribe anything, so they say, yet their intention is explicit in the very title of the article: *“The climate mitigation gap: education and government recommendations miss the most effective individual actions”*. In the abstract of the article, it is claimed that *“high school science textbooks ... fail to mention these actions”*, that *“government resources ... also focus recommendations on lower-impact actions”*, and that:

*“there are opportunities to improve existing educational and communication structures to promote the most effective emission-reduction strategies and close this mitigation gap.”* (The main article, p.1).

Here we have the authors’ intention to *“close this mitigation gap”* in governmental and textbook recommendations, and no intention to intrude on people’s personal lives in any way. While presented as benign suggestions, the narrative of “reducing one’s impact” implies what is the *right* thing to do and evokes a moral duty to make reproductive decisions in the interest of the greater environmental good (Sasser, 2017, p.345). Using such categories as *“the environmental impact of family size”* (The main article, p.7) again puts the importance on the amount of members per family, and implies that only a specific kind of family size is environmentally friendly.

In the FAQ’s document, under the question *“5. What can I do as an individual?”* the authors write that they have heard from many members of the public already taking action and are considering going further *“now that they know these choices really count for the climate”* (FAQ’s, p.10). They go on to give an example:

*“A new mother in Sweden wrote: “We became parents 3 weeks ago and we are trying our best to cut down on our carbon emissions. Thank you for the*

*graphics. I'll put them on our refrigerator so I'll make sure we're reminded every day.*" (FAQ's, p.10)

The message shows not only the moral obligation to cut emissions through suggested lifestyle choices, but especially so if one is a new mother. The obligation is strengthened through the power of science, which the authors use deliberately in most of their material, as will be illustrated in the next section. Perhaps even more significantly, this is being popularized and naturalized through widely available media sources.

Among the practical elements the authors miss out on when focusing on the amount of people are "local context, resource consumption, polluting technologies, state-and corporate-based resource extraction and pollution, and the environmental impacts of military operations" (Sasser, 2018, p.50). Moreover, population growth as inherent depletion of resources is based on concepts of nature and resources constructed through capitalist systems that assign them value (Harvey, 1974). Discussions on population growth, as the one in focus, as a rule "fail to interrogate the hegemonic power structures that have precipitated the contemporary crises of civilization – including ... the ecological crisis" (Dyett and Thomas, 2019, p.206). But that is exactly why having fewer children for the climate makes so much sense. When we believe that individual choices work as environmental solutions and that the major problem, however we look at it, is the size of the population, we naturally start to ponder whether we want children or not. While a solid "no" already suggests itself, it is even more so when we convert children to carbon emissions.

#### 4.3. How an un-born child saves 58.6 tonnes of CO<sub>2</sub> per year

The desire to reduce people on earth flourishes well when we think of the climate crisis first and foremost, if not only at times, in terms of carbon dioxide emissions in the atmosphere. The problem of measuring all things in carbon emissions is not simply that the science of its quantification is contentious, but because it "is embedded in a multiplicity of political, economic and cultural contexts" (Goodman and Boyd, 2011, p.105). Under this section I show what makes counting children in CO<sub>2</sub> emissions "logical" yet also quite problematic. I believe it is first necessary to quote a few passages to get a taste of quite specific language:

*“An individual planning the size of their family **has control over the magnitude of potential emissions of their descendants ... in completely preventing these emissions from occurring, if they choose to not create those descendants in the first place ...**”* (Reply to the 1<sup>st</sup> comment, p.2)

*“However, regardless of methodology used, we are convinced ... that **having one fewer child is the most substantial action that most individuals can take to make a quantifiable reduction in personal carbon emissions.**”* (Reply to the 1<sup>st</sup> comment, p.2)

*“**Having one fewer child will save 58.6 tonnes of CO<sub>2</sub>-equivalent per year**”* (The Guardian article)

Not only then an un-born child is comparable to “684 teenagers who choose to adopt comprehensive recycling for the rest of their lives” (The main article, p.3), but it also actively fights climate change by not producing 58.6 tonnes of CO<sub>2</sub> yearly. Counting children in emissions (savings) objectifies them even further than becoming a lifestyle choice – they are treated both as a conglomeration of gas and accumulation of purchasing choices, making childbearing detached from its biological and social essence. Under the methods section of the main article, the authors write that for the action “have one fewer child”, they relied on a study by Murtaugh and Schlax (2009) called “*Reproduction and the carbon legacies of individuals*”. Even though the calculations of this study are rather difficult to grasp, the language used is quite familiar. Their basic premise, the scientists write, is that “*a person is responsible for the carbon emissions of his descendants, weighted by their relatedness to him*” (Murtaugh and Schlax, 2009, p.14), which makes each parent responsible for ½ of the emissions of their children, and ¼ of the emissions of their grandchildren. These relatedness weights are chosen to be called “genetic units”, meaning that:

*“the fractional genetic unit represented by a particular descendant can be thought of as **the proportion of the ancestor’s genes ... that are shared with the descendant, or the “percentage of blood” that the two have in common**”* (ibid.).

And this means that the amount of CO<sub>2</sub> release of one's children is compared to the share of genes<sup>7</sup>, insinuating that carbon legacy runs through blood, which takes the discussion about the focus on carbon to the next level. The goal of this study was “*to quantify the consequences of the childbearing decisions of an individual*” (Murtaugh and Schlax, 2009, p.15). The paper produces emissions calculations of a newborn child for 11 countries, taking into account average fertility, life expectancy, and alike dimensions of each population. The differences among countries are briefly articulated, but the message to send across is one:

*“Clearly, an individual’s reproductive choices can have a dramatic effect on the total carbon emissions ultimately attributable to his or her genetic lineage. ... ignoring the consequences of reproduction can lead to serious underestimation of an individual’s long-term impact on the global environment.”* (Murtaugh and Schlax, 2009, p.18).

Attributing carbon emissions to one's genetic lineage couples carbon with childbearing in a worrying sense. But even besides that, the overall discourse treats a child (a human, one could even say) as self-evidently a conglomeration of gas resulting from parents' lifestyle choices, thus making the “*consequences of reproduction*” potentially extremely disastrous for “*the global environment*”.

Regarding ethical responsibility in carbon politics, the highly missing question is “who and what has the marketable and moral right to pump carbon dioxide into the atmosphere” (Goodman and Boyd, 2011, p.105). The authors of “have one fewer child” seem to agree that emissions responsibility (generational and geographic) is a worthwhile philosophical question, but, they go on to say, their analysis focused on options for high-emitting individuals and it is essentially up to us to remain within the carbon budget to stay below 2°. So, philosophy is worthwhile, but “*having one fewer child will save 58.6 tonnes of CO<sub>2</sub>-equivalent per year*”. When contemplating the amounts of carbon emissions we could save by creating less descendants, the authors even articulate it as “*having the potential to contribute to systemic change*” (The main article, p.3). Diluting such important notions undermines the work of people who are seeking justice or

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<sup>7</sup> Broader implications of this are tackled at the end of the next chapter.

systemic change by challenging the structures of inequality that have shaped the very system we seek change of (Sasser, 2018, p.7).

The concluding remark of this section is thus similar to the previous ones. The idea that it is carbon emissions which defines the current crisis and that population will continue to be a multiplier of those emissions shall logically lead an individual to wanting less children, especially if this individual cares for the environment. Measuring an unborn child in carbon emissions savings not only objectifies childbearing, but continues to conceal the very socio-political nature of the current order of things. The “intrigue” here is that if we focus on carbon emissions and “have one fewer child” as means to “save” them, without a single word on social and geographical context, it can mean something interesting for bodies which are in a position of a more literal ability to produce (or contain) those emissions. The intrigue is ever stronger given the historical developments of our current economic system in relation to different bodies, social groups, geographical contexts. This is what largely leads us to the next chapter, yet first I shall take a look at what context there is in the analyzed material.

#### 4.4. “Have one fewer child”: gender-neutral, context-free, science-based

In the analyzed material, it is a high-carbon individual or a family that chooses to (not) have a child, as it cares for the environment and the science is clear on what actions to undertake. In this section, I focus on the perceived scientific duty to tell people the uncomfortable truth, and the portrayal of the suggested “lifestyle choices” as not “sacrificial” and even universally beneficial. I show that this is especially troubling since there is not a single word that promoting a “lifestyle choice” of (not) having children might touch different sexes and social groups differently. It also places an authority of scientific knowledge above morals, ethics and other types of knowledge. This section thus also rounds up the chapter in suggesting that gender- and context-absence eases the way for an already self-evident incentive to restrain from children.

Statements that the authors are here to help us and that it is their job to report the data to us come up in all the documents, but in *The Guardian* is expressed particularly well, as Kimberly Nicholas is quoted:

***“It is our job as scientists to honestly report the data. Like a doctor who sees the patient is in poor health and might not like the message ‘smoking is bad for you’, we are forced to confront the fact that current emission levels are really bad for the planet and human society.”***

In their second reply to criticism, the authors are thankful for the ability “to clarify” their position on what they call a sensitive topic of family planning. “We do not by any means wish for our results to be used as justification to infringe on anyone’s rights to family planning” (p.2) and “We agree that family planning can be a sensitive ethical issue” (p.2), the authors write. Despite their best efforts, though, “there were some media reports that interpreted our findings in ways we did not intend. But we believe we were clear about our own ethical stances when communicating with the media” (p.3). They carry on giving examples on what sort of ethical stances they have in mind. The general emphasis of these widely-communicated messages is that having a child is a very personal decision, yet it is followed by: “Certainly it’s not my place as a scientist to dictate choices for other people. But it is my place to do the analysis and report it fairly” (Reply to the 2<sup>nd</sup> comment, p.3). And the analysis clearly shows – have less children if you care for the environment. Science here is used not only to legitimize their claims, but to deliberately minimize controversy (Sasser, 2018, p.6) of “dictating choices for other people”. And this is as much ethics on family planning as it gets.

In the comparison with smoking, it is implied that such truth is rather uncomfortable, but the following paragraph in The Guardian article reassures that “It is not a sacrifice message ... It is trying to find ways to live a good life in a way that leaves a good atmosphere for the planet. I’ve found it really positive to make many of these changes.” The level of privilege of this message is eyebrows-raising in the FAQ’s document, under the question of what personal contribution the authors make themselves:

*„Seth: I've personally enjoyed a more leisurely pace on a few trips by taking the train, getting work done with the train's wifi, and avoiding the hassle of security at the airport. I've never owned a car, and I do my best to eat a plant-based diet, although I will eat meat if it's about to be thrown out because I like to prevent food waste as well.*



*Kim: ... I've cut my flying 80%, sold both my cars and moved to the center of my small city where I can bike to work, and gone meat-free. All of these choices have enhanced my quality of life.*" (FAQ's, p.12)

In the main article the authors give an example of how the promotion of switching from plastic bags to reusable bags, as was done in their analyzed textbook, creates "*the impression that the issue of climate change itself is trivial in nature*" (The main article, p.7). Now what kind of impression about climate change do the above quotes create? It does not, indeed, sound very much like a sacrifice message, but how many individuals are able to enhance their quality of life like that remains an open question. The potential contra-argument is that the study focused on developed regions, where these choices are supposedly available to *most* people. But it nevertheless constructs a normative picture of what it means to be environmentally friendly, that it is uncomfortable to hear at first, but is essentially easy and even beneficial for the quality of life. Troubling is not only that this "climate-responsible individual" is likely to have no geographical boundaries, but the construction of this very individual for any context, as it creates social and moral pressure to adopt the ever-accelerating trends of eco consumerism and green lifestyle choices (Appadurai, 2019). The only mention of "contextual" difference in The Guardian article is: "*The researchers analysed dozens of sources from Europe, North America and Japan to calculate the carbon savings individuals in richer nations can make.*" It is not simply potentially unavailable to *most* people, but is likely to infringe on other kinds of reproductive practices and understandings of care for the environment than through one's lifestyle choices.

It does make sense to have fewer children if we follow the concept of responsible environmental citizen, which is built on pervasive ideas of individualized responsibility, neo-Malthusianism and humans as carbon emissions. It is a neoliberal concept in a way that this agent is framed "within the logistics of private, individual decision-making and choice, who adopts a modicum of embodied environmental responsibility" for our common good (Sasser, 2018, p.3). It flourishes particularly well within gender-neutral, context-free and value-neutral scientific discourse from the Global North. Malthus also used a "reified and mathematical discourse in constructing the study of population as an autonomous scientific endeavour and seemingly purifying it ... of its connections to politics and history" (Briggs, 2004, p.17), a tradition which the authors of "have one fewer child" seem to continue. To imagine women (and men) as autonomous

agents whose fertility is individually driven, one *needs* to lift it out of social contexts most often characterized by gender inequality among many other structural and cultural specificities (Sasser, 2018, p.4). In the next chapter, I seek to contextualize this scientific account in socio-political and historical contexts to offer an understanding of how children got to the top of that chart and what that implies.

## **5. “Have one fewer child” in a socio-political and historical context**

In this chapter, I essentially situate the ideas and assumptions “have one fewer child” is built upon within a socio-political and historical context. Whilst there is no linear, coherent history of capitalism-state-reproduction relations which smoothly lead to “have one fewer child”, I argue that there are traceable historical developments which contributed to its birth. Namely and broadly, those are: the separation of production and reproduction during the formation of capitalism, the establishment of population, and thus reproduction, as governable territory in need of management (of *global* one in the climate change discourse), and the formation of the liberal individual in relation to reproduction. At the end of this chapter I also reflect upon how “have one fewer child” fits within the Anthropocene – itself a very specific creation – what that implies for females and for the way we perceive climate change in a broad sense.

### **5.1. Individual lifestyle choices in 16<sup>th</sup>-17<sup>th</sup> century witch-hunts: (Re)production and the birth of capitalism**

In this section I use 16<sup>th</sup>-17<sup>th</sup> century witch-hunts in England as a starting point for tackling reproduction under capitalism. I show, first, that state-capital interest in reproduction is of a political nature dating back to capitalist take-off, and, second, that women *became* natural attributes of the household under a specific socio-economic logic which divided labor according to sex. I propose that these developments are important for exposing the depth of some of the

assumptions and thus the far-reach of the implications which gender-blind scientific interest in reproduction, as in “have one fewer child” case, might hold.

While continuity of female subordination across class-divided societies can be historically traced, crucial shifts are observed “in the ways this domination is organized” (LeBaron, 2010, p.896) during the originary moments of capitalism in early modern England (ibid.). A Marxist-feminist scholar Silvia Federici (2014) analyzes this transformation through the 16<sup>th</sup> and 17<sup>th</sup> century witch-hunts<sup>8</sup>, essentially offering a feminist take on the classic Marxist notion of primitive accumulation<sup>9</sup>. The crumbling of cooperative relations with the abolishment of the open-field system and the fencing off communal lands, she shows, resulted not only in deepening economic inequalities among peasantry, but in “a web of hatred and resentments that is well-documented in the records of the witch-hunt” (Federici, 2014, p.72).

The first essential part of the argument is that the witch-hunt marks state-interest in reproduction in significantly new ways. Federici (2014, p.86) argues that it was the 16<sup>th</sup> and 17<sup>th</sup> centuries’ demographic and economic crisis which turned reproduction into state matters. The witch-hunt was largely led by European governments imposing the severest penalties against contraception, abortion and infanticide; a literal demonization of any form of birth-control and non-procreative sexuality took place. This, according to the author (2014, p.88), marked “the beginning of demographic recording and the intervention of the state in the supervision of sexuality, procreation, and family life”. The outcome of these policies was therefore such that *wombs became public territory controlled by men and the state* (ibid., p.89, emphasis added).

Besides the witch-hunt, there were other major circumstances that have contributed to increase the determination “of the European power-structure to control more strictly women’s reproductive function” (Federici, 2014, p.87). The role of the Church is of special mention here, as religious ideas of hell and evil heavily contributed to demonizing female sexuality (Federici, 2018, p.29). Through witch-hunting, the authorities simultaneously punished “the attack on private

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<sup>8</sup> Some of the text explaining Federici’s work comes from my own essay for a CPS course *HEKN14: Political Ecology, Crisis, and Identity*, Spring semester 2019.

<sup>9</sup> Roughly speaking, primitive accumulation for Federici is not only a concentration of exploitable workers and capital, but also “*an accumulation of differences and divisions within the working class*” (Federici, 2014, p.63, emphasis in original), built upon hierarchies regarding gender, “race” and age (ibid.). It is also not a one-time affair, but a strategy “to which the capitalist class always resorts in times of crisis when it needs to reassert its command over labor” (Caffentzis and Federici, 2014, p.i94).

property, social insubordination, the propagation of magical beliefs, ... and the deviation from the sexual norm” (ibid., p.20). It is therefore not coincidental that at the same time as there was a growing need for labor force, “severe penalties were introduced in the legal codes of Europe to punish women guilty of reproductive crimes” (Federici, 2014, p.87). Since English state formation “belonged to the same process that brought about capitalism” (Wood, 2017, p.173), historically their interests were often coinciding. Up until today, increasingly globalizing capitalism “requires close social and legal controls, such as those provided by the nation state” (ibid., p.180) in order “to maintain local conditions favourable to accumulation as well as to help it navigate the global economy” (ibid., p.177).

Another crucial argument of Federici’s analysis is that the history of the witch-hunt undermined the unity between production and (social) reproduction. The subsistence economy in pre-capitalist Europe was characterized by such unity and was typical for all societies based on “production-for-use” (Federici, 2014, p.74). The unity was fundamentally changed with the sexual differentiation of labor, when the economic importance of reproductive work carried out in the home became mystified as a natural vocation (ibid., p.75). As before capitalism, no economy could function without women as procreators and women as workers (Mies, 2002, p.110), until they were turned to procreating household items. Women were deprived of the means of production and subsistence, largely excluded from craftwork or access to the new jobs in manufacturing, and thus often were limited to either marriage or prostitution for survival (Costa, 2004, p.3). The witch-hunt destroyed a whole set of female practices, collective relations and systems of knowledge (Federici, 2014, p.103); it produced a kind of “female pervert” and banned non-productive, non-procreative forms of sexuality leading to the transformation of female sexuality into work (ibid., p.192). Through the separation of surplus extraction from the household, it was thus not the rise of industrial production itself that made families lose the capacity to coordinate productive and reproductive tasks, but *the classed and gendered character of it* (LeBaron, 2010, p.893, emphasis added).

Federici argues that after more than two centuries of such “state terrorism” that women had been subjected to, a new model of femininity emerged. From a savage, mentally weak, unsatiably lusty, rebellious, insubordinate, incapable of self-control being, into a passive, obedient, thrifty, of few words, always busy at work, and chaste woman and wife (Federici, 2014, p.103). The need

for a healthy workforce was marked by mothers' "new level of emotional and financial investment in an increasingly substantial "home" (Davin, 1978, p.55), which set ideological barriers to married woman's work outside of the household (ibid.). A 19<sup>th</sup> century woman's position as a full-time housewife, Federici (2014, p.75) claims, not only completely fixed women to reproductive work, but "increased their dependence on men, enabling the state and employers to use the male wage as means to command women's labor". This completely redefined women's position in society and in relation to men "in and through capitalist social property relations" (LeBaron, 2010, p.894). By losing access to the commons and by the naturalization of their work as a natural resource outside of market relations, *women themselves became the commons* (Federici, 2014, p.97, emphasis in original). When social reproduction was relocated and further commodified in the household, social and political life became "more deeply embedded in capitalist social relations in complex and contradictory ways" (LeBaron, 2010, p.902). As will be touched upon in the following sections, roles of reproduction and motherhood did have historical variation, yet by and large, they did not escape assumptions about women and domesticity.

There are many important directions that women as the commons could take us, yet for this work it was important to establish that reproduction under capitalism is a very specific historical creation (and that many associations that we have regarding it are ideologically contingent on this history), and that it marks a shift in the state-reproduction relation. Now it might seem odd to bring up "have one fewer child" here, as the authors do certainly not suggest any female subordination, do not insinuate any female role in society and anything similar of that sort, especially as they do not mention females (nor males) at all. But my suggestion here is that "individual lifestyle choice" to have more or less children (as opposed to the more controversial household "duty" to reproduce) is an interest to regulate reproduction, which does not alter gendered divisions of labor or the social relations of production and reproduction (Katz, 2001, p.712), but is implicitly built on them. This is not to imply that these relations have remained static ever since the beginning of capitalism, but to argue that a neoliberal treatment of childbearing is ideologically contingent on these capitalist categories.

At the time of the capitalist take-off, when physical labor was the primary means of production, "the state had to resort to regulation and coercion to expand or reduce the work-force" (Federici, 2014, p.91), but even down to the present, it spares no efforts to determine which

children should be born, where, when, or in what numbers (ibid.). Although “closing the mitigation gap” through restraint from children is nowhere near to a witch-hunt, it does spare no effort to recommend an environmentally friendly family size. Sexual behavior and procreation under state-rule, as established with the witch-hunt, later takes different forms and purposes, and gets an especially serious grip with the formation of population as a more bounded area of inquiry, susceptible for and even in need of state-management.

## 5.2. Reproduction in the service of the common good: Malthus and his legacies

Since around 18<sup>th</sup> century, there was high interest in reproduction by powerful figures and groups “that saw themselves as guardians of the interests of the nation/state” (Jordanova, 1995, p.376), and whose efforts showed “attempts to construct the psychic significance of reproduction” (ibid.) These ideas show how population control was justified and normalized, and reveal normative accounts on reproduction as serving some greater purpose. In this section, I look into some of these accounts to illustrate the development of reproduction into a fully governable territory, and to show that their interest was most often both political *and* economic. I begin with the “father” of the “law of population” – Malthus – to look into some of the components his theory was built upon and explore what kinds of interests in population management grew out of it.

16<sup>th</sup> century enclosures of common agricultural land (and other capitalist-driven circumstances) turned many farmers into vagabonds and beggars (Federici, 2018, p.20), and thus resulted in a rather sudden growth of the poor (Sasser, 2018, p.52). Growing concern of the British state led to its institutionalization of the Elizabethan Poor Law in 1601 (ibid.). Within this context, 17<sup>th</sup> century was characterized by contrasting views regarding population, among which was both the fear of the proliferation of poverty and the explicit idea that large populations were a necessary source of labor for the state (ibid.). Population as a bounded area of inquiry to be regulated for the interest of common good came to fruition with Malthus and his “law of population”, and it came together with specific interest in birth. For earliest liberals (namely, Hobbes and Locke) childbirth was rather something that simply occurred, yet in 18<sup>th</sup>-19<sup>th</sup> century liberal thought, birth became something that should be regulated or at least managed (Ruhl, 2002, p.647). Both Malthus and

Smith (the “father of economics”) were concerned with the profligate waste of resources through high infant mortality rates on the one hand, and the proliferation of pauperism, on the other. They were thus both drawn into discussions about how to limit and plan births (ibid.).

The famous “law of population”, which establishes the mathematical link between the amount of people and the environmental degradation, contained specific ideas on how the births should be regulated, was of explicitly classist nature and legitimized concrete interests. Malthus argued against the Poor Laws because they were “shortening labour without the proportional extension of the market for the commodity” (Malthus, 1998[1798], p.10) and facilitated uncontrolled population growth (ibid., p.24). Without the Poor Laws, he was convinced, “the aggregate mass of happiness among the common people would have been much greater” (ibid., p.29). The natural limits of population growth, namely, starvation and death, were theorized as encouraging humankind to reach its highest moral and social potential through hard work and responsibility. State intervention to improve the welfare of the poor was unnecessary and even disrupting nature’s intention to keep human growth and food resources in balance, while making the poor contribute effectively to society through hard work (Sasser, 2018, p. 53). Malthus contributed centrally to the line of thinking that egoism “can produce social order and collective benefits” (Hirschman, 1977 cited in Briggs, 2004, pp.7-8), thus *legitimizing and naturalizing capitalism* with that same law of population (Briggs, 2004, p.8, emphasis added). His theory was a powerful way of constructing social inequality, “one that helped protect the social and political-economic status quo when it was under attack and to further legitimate practices of capital accumulation.” (Briggs, 2004, p.19).

The impact of Malthusian theory can hardly be overestimated. It irrevocably influenced the development of scientific thinking and directly shaped the expansion of scientific theories and methods in eugenics, demography, and, not the least, ecological theory of carrying capacity (Sasser, 2018, p.53). It essentially contributed to making population manageable, mostly through normative accounts on reproduction, thus turning it into public territory. To begin with, the necessity to manage population was greatly advanced by eugenics. The term was coined by Francis Galton in 1883, which meant “the science of improving stock” and reflected broader 19<sup>th</sup>-20<sup>th</sup> century concerns of Europe and North America about biological and social deterioration (ibid., p.54). In many accounts of a qualitatively and quantitatively improved nation, women bore particular

responsibility: “that of bearing children to build and strengthen the race” (ibid., p.57). 19<sup>th</sup> century Euro-American Victorian mores at home and imperialism abroad thus “helped to construct and maintain racial and class categories through the control of reproduction” (Ginsburg and Rapp, 1991, p.316). This was conducted through, for instance, supporting working-class mothers so that their sons provide high-quality “cannon fodder”, treating the reduction of birth among middle-class women as selfishness and infants as requiring medical care and public health surveillance (ibid.).

Both radical neo-Malthusianism and eugenics advocated a selective limitation of population growth, yet another view was emerging around the beginning of 20<sup>th</sup> century. Early expressed by Charles Kingsley (in 1858) was the idea that in a country which has the greatest empire in the world (namely, England), over-population was impossible. This narrative particularly raised the fight against infant mortality, made giving birth a duty and birth rate a matter of national importance (Davin, 1978, p.12). Childrearing was thus strengthened both as a moral and a national duty, to which state could of course intervene if done badly. On such basis, a powerful ideology of motherhood emerged. Rooted in 19<sup>th</sup> century assumptions about women, domesticity and individualism, motherhood was to be given a new dignity: “it was the duty and destiny of women to be the “mothers of the race”, but also their great reward” (Davin, 1978, p.13). Importantly, it was both to maintain the empire and “for production under changing conditions made necessary by imperialist competition” (ibid., p.49).

Malthusian ideas were grounded in the quantitative sciences through demography, dominated at that time by “biological Malthusianism” – a combination of social Darwinism and racist ideas – mostly expressed through the intention to increase birth rates of native-born whites (Sasser, 2018, p.59-60). Seemingly moving away from these ideas, a group of “population scientists” was growing, who wanted to make population questions more empirical in basis and thus emphasized compiling population statistics (ibid., p.60). During the 1920s and 30s, demography became an institutionalized academic discipline, yet “quantitative analysts did not reject more ideological positioning” (ibid.). Population statistics accelerated the molding of *reproduction into a governable area* – reproductive practices, particularly of the working classes, were made into an object open to change (Greene, 1999 cited in Sasser, 2018, p.59). Procreation, previously understood to be natural, was now reframed as governable, “something that could be



artificially regulated through study and intervention” (ibid.). Plenty could be said about the role of modern science to the formation of the female role in general (see, for instance, Merchant, 1980), but my goal here is to emphasize that the proliferation of statistics and other scientific accounts on population fully turned it into a manageable state matter.

This brief account on population management discourses demonstrates how strongly political any attempts to regulate populations have been. It most often assumed reproduction in the service of the state/nation/empire and economic growth, and the role of mothers as responsible for bringing up children in the right quantity and quality. My intention here was to suggest that the authors of “have one fewer child” resemble those guardians of greater interest, just that the one in this case – the survival of our planet – seems impossible to debate against and to question its legitimacy, but that does not make it less political. As shown in the previous chapter, science-based voluntary “lifestyle choice” drives on a neoliberal agenda which has normalized treating humans only in matters of resources, their purchasing habits and amounts of CO<sub>2</sub>.

### 5.3. Globalizing the population issue: On Earth’s carrying capacity

It is important for the question at stake that in climate change debates, the issue of overpopulation becomes a fully global concern, and is entrenched in a web of global power dynamics. To cover this question adequately would require looking deeply into the colonial history and its descendant – development. In this section, I limit myself to several historical elements and notions (with particular attention to Earth’s carrying capacity) that contributed to the now common-sense idea that (over)population is a global environmental issue. The aim of this is to suggest that an individual lifestyle choice to restrain from children is an oxymoron, as it puts individual’s sexual life at the service of our planet’s future.

American zoologist and a follower of Galton, Raymond Pearl, had a great interest in biostatistics and claimed biology to be the determining force in human population growth and its limits (Sasser, 2018, p.65). Pearl was actually among the first to take population as a scientific object to be studied and *manipulated through direct intervention* (ibid., p.66, emphasis added). He also highly contributed to the interest in population density – scientists searching for optimum

density were just as concerned about soil fertility “as they were about women’s reproductive fertility” (ibid., p.67). Shortly after, in 1945, a famous demographer Frank Notestein articulated his theory of demographic transition – a normative four-stage modernization model based on historical population trends in 18<sup>th</sup>-19<sup>th</sup> century Europe, namely, lower fertility and lower mortality rates (ibid., p.60). It assumed that patterns of high child mortality and high replacement fertility would decline thanks to “modernization” which included public health measures and Western biomedicine (Ginsburg and Rapp, 1991, p.326). This model was grounded in capitalist development and the logic that only an increase in economic production could improve social welfare. It was to be followed by the Global South since global social welfare needed fertility reduction of the world’s poor (Sasser, 2018, p.61). Coexistence of the need for direct intervention and for demographic transition is deadly familiar for critical development studies (Veltmeyer and Wise, 2018), and it still underlies international family planning policies and narratives (Sasser, 2018, p.61).

By the end of 1950s in the U.S., birth control advocacy was tied with the idea that individual changes are significant to shift the demographic landscape, which formed the basis for the demographic missions to the Third World facilitated by private philanthropic organizations (Sasser, 2018, pp.62-63). Thanks to these missions, “demographic knowledge became increasingly international, and more closely and formally linked to U.S. foreign policy.” (ibid., p.63). The proliferation of birth control through these missions (along with other developments) increasingly individualized the population issue. The 21<sup>st</sup> century narrative still holds that population growth is directly linked with an impending global catastrophe, but it is to be solved through women’s empowerment and voluntary access to family planning (Sasser, 2017, p.346).

Another essential notion contributing to the global concern with the population in environmental debates is Earth’s carrying capacity. The history of carrying capacity is one of a search for ways to quantify the correct number of people within a population in order to prevent or reduce environmental degradation, in other words, to “achieve balance” with natural resources (Sasser, 2018, p.64). Original carrying capacity arguments advocated for a cold calculus in determining the relative value of lives – “particularly those deemed environmentally destructive” (ibid., p.65). The idea of calculating the destructiveness of life should by now sound familiar – we need much less of the high-emitting lives (yet through voluntary choice).

Originating as a reference to the tonnage (storage capacity) of ships around mid-19<sup>th</sup> century, it later emerged as “an expression of state power and control through selective application by state authorities” (Sasser, 2018, p.68). In 1948 Vogt published “Road to Survival” – the first tract articulating a global neo-Malthusian carrying capacity, directed at the poor and advocating population growth control through contraception (ibid., p.69). Two most prominent voices who linked carrying capacity ideas to human population control were Garret Hardin and Paul Ehrlich. In 1968, Garrett Hardin wrote a well-known article “The Tragedy of the Commons,” in which he used the metaphor of a common pasture available to all to graze their herds to describe the dangers of overpopulation (ibid., pp.70-71). The article escalated to the extent of becoming the “Magna Carta” of compulsory population control through “mutual coercion” by the majority of affected people, particularly focused on women since freedom to breed, Hardin claimed, would bring ruin to all (ibid., p.71).

The proliferation of carrying capacity culminated in the Club of Rome-commissioned project, “The Limits to Growth” (1972). This book produced a series of computer-generated models, projecting how “exponential growth of population, food production, and consumption patterns would interact with resources” (Sasser, 2018, p.76). Predictably, the models indicated the eventual overshoot of available resources by a growing population, leading to the Club’s famous conclusion that “human population growth and resource use far exceed the carrying capacity of the earth’s finite resources” (ibid.). Carrying capacity became fully embedded in population sciences and provided them with appearance of objectivity, rationality, and precision to policies that might have otherwise seemed politically or economically motivated (ibid., p.68).

With the help of both previous and this sections in historicizing population management, the role of reproductive life in it, and its global scale in environmental debates, I have tried to illustrate that linking „have one fewer child“ to climate change implicitly “places women’s individual reproductive lives in global context” and thus is never individual, never free from duty to reproduce responsibly (Sasser, 2018, p.3).

#### 5.4. The modern individual: Self-control and willed pregnancy

Under this section, I articulate the importance of liberal theory's self-controlling individual in creating a specific conception of reproduction which allows one to think of it as inherently under control and in constant possibility to be restrained from. At the center of this section is the argument that the suggestion to restrain from children is based on the liberal idea of willed pregnancy. To explain what willed pregnancy is built upon, I mostly lean on Ruhl's (1999; 2002) work on the intersections of uncertainty, reproduction and the rhetoric of control.

According to Ruhl (2002), willed pregnancy underlies discussions on population control and (self-) control over conception and birth. Willed pregnancy originates in liberal theories of subjectivity, to which self-control is an essential element. Roughly speaking, subjectivity in liberalism is radically individualistic: the universal human has capacity to reason and to remove himself from particularities – from time, space, and bodily circumstances – plus, is insatiably appetitive (ibid., p.644). The key moment in modern liberal context is that these appetites are to be *internally restrained through self-discipline* (ibid., p.645, emphasis added). Modern liberalism, the author claims, implicitly relies on “the capacity and willingness of its citizens to self-regulate”, which is a kind of liberal governance in that it “continually emphasizes and reinvents personal autonomy” (ibid.). Regarding reproduction, liberal governance operates through the idea of planned parenthood, which on the one hand identifies individuals as targets of governmental action, and on the other hand as voluntary partners or accomplice of government (Burchell, 1993 cited in Ruhl, 2002, p.645).

The author claims that willed pregnancy marks a shift from classical liberalism, for which the woman was “naturally” subjected to her body and reproductive functions, to the woman who is “in charge of” these processes (Ruhl, 2002, p.651). This procreational ideology thus rehabilitates pregnancy (and, therefore, women) for liberalism in that (self-) control is imposed on a biological process that was held to be beyond human control (and beyond the scope of liberal theory) (ibid.). The twist is that such self-control of one's biological functions is tied with being responsible (ibid., p.650). At the time of the author's writing, unplanned pregnancy was represented as a failure of responsibility and even a possible source of danger, thus fetishizing the will to a striking degree (ibid., p.651).

The extension of self-discipline to the sphere of procreation illustrates the simultaneously individualizing and totalizing principles of the modern state (Ruhl, 2002, p.648). Discussions on

population control and (self-) control over conception thus usually contain two dimensions: the individual one, that “a woman should be able to control and space her births”, and the collective one, “which populations are bearing how many children” (ibid., p.643). As already suggested, this is exactly what we find under “have one fewer child” – an abstract individual in control of one’s biological functions and with moral obligation to plan one’s births to reduce one’s contribution to climate change.

The modern liberal self-controlling, birth-planning individual is, as shown in this subchapter, an ideological product which a proposal to restrain from children relies on. This is not to argue that planning a family is a somewhat evil activity, inherently perpetuating liberal ideology. It is to suggest that the construction of a moral obligation to restrain from children is built on the conception of willed pregnancy, and that this conception implicitly places the blame for the world’s ecological crisis on the laps of “overly fertile” women (Ruhl, 2002, p.643).

### 5.5. Reproduction in the (m)Anthropocene: Fewer children for future generations

Finally, I feel it is necessary to bring back the gender-neutral, context-free, science-based environmentally friendly restrain from children and situate it within the proclaimed human-dominated era, as well as to ponder the “existential” questions it raises for the mankind<sup>10</sup>. The purpose of it is to suggest that the (m)Anthropocene is an outcome of the historical developments described in this chapter (together with many others, of course), making it a context in which environmental solutions such as “have one fewer child” are able to flourish. This section both rounds up this chapter and opens up the floor for multiple related discussions.

In environmental science literature, the Anthropocene is normally described as:

a proposed new geological epoch based on the observation that human impacts on essential planetary processes have become so profound that they have driven the Earth out of the Holocene epoch in which agriculture, sedentary

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<sup>10</sup> Some text on the Anthropocene is used from my essay for a CPS course *HEKN11: Culture, Economy and Ecology*, Fall 2018.

communities, and eventually, socially and technologically complex human societies developed. (Steffen et al, 2018, p.1)

In 2002, when the atmospheric chemist Paul Crutzen published his famous piece on “The Geology of Mankind” and the Anthropocene was popularized, it was simultaneously tied with the “latter part of the eighteenth century”, which also happened to coincide with the design of the steam engine by James Watt (Crutzen, 2002, p.23). In the article called “The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?” Steffen, Crutzen and McNeill (2007, p.616) proposed that “atmospheric CO<sub>2</sub> concentration can be used as a single, simple indicator to track the progressions of the Anthropocene”. What essentially defines *us humans* then, is the overall level of CO<sub>2</sub> in the atmosphere. Human nature thus becomes tied to CO<sub>2</sub>, which is popular for its destructive effects, and consequently makes humans somehow inherently destructive. “Have one fewer child” takes this inherent human quality to the next level of naturalness through, firstly, claiming that an unborn child actively saves emissions, and secondly, establishing CO<sub>2</sub> emissions as part of the parent-child relationship, even comparing it to genes. This makes giving less birth *extra-sensical* and articulates a rather new role of humans within an era dominated by inherently destructive humans.

It brings the human to an existential moment – in this human-dominated era, giving birth to a child has become one of the most destructive things one can do to the environment. With the catastrophic prognoses for the Anthropocene’s future making, humanity’s temporal, ontological, and epistemological essence becomes uncertain (Hamilton, 2017, p.580). This forms quite a paradox: “an existential discontinuity, in which humanity must secure itself in the future from itself in the present” (ibid.). The irony is almost explicit in Wynes and Nicholas correspondence – individuals should have fewer children *for* the children (and future generations):

***“Enabling kids to grow up in a safe climate is a huge incentive to reduce overall national emissions to sustainable levels ....”*** (Reply to the 2<sup>nd</sup> comment, p.3).

***“Many individuals ... want to know which of their personal choices make the biggest difference for the climate. This includes many parents who want to pass on a better, safer world to their children, ....”*** (FAQ’s, p.1)

*Our* ability to transform nature, resulting in an exponential growth of *our* freedom and power, seems to have been translated into the destabilization of the very framework of life, that is, a limitation of *our* freedom (Cunha, 2015, p.65, emphasis added). Human species thus seems to subsume the world, making itself simultaneously an object and a subject of security (Hamilton, 2017, p.580). Yet the actual tragedy the Anthropocene narrative encapsulates is in what it assumes, claims and perpetuates. To reduce human to a violating tendency or an inevitably harmful collective force “is to misrepresent a minority as all of humanity, and to identify ideologies of domination and disregard for nature as paradigmatic and definitive of all humanity” (Cuomo, 2017, p.2). One among the main issues of upgrading *Homo sapiens* into a geological agent by carbon dioxide (Malm, 2016, p.27), is that such universal-species geological agency cannot be attributed to humanity as a whole *by definition*, since historically “climate change has come about because a fortune few have appropriated the bulk of the atmospheric carbon sink through massive emissions” (ibid., p.390). Suggestions that the devastation of Earth within the last two centuries is species-driven not only “neglects gendered and cultural differences in orientations toward nature” (Cuomo, 2017, p.2) but also conceals the drivers of ecological destruction (Di Chiro, 2017, p.489). Although the notion is supposed to describe the crisis, it attributes capitalist and militarist impacts to humanity as a species (Cuomo, 2017, p.2) and thus instead contributes to naturalizing the world order that “solidified in the nineteenth century”, and to rationalizing the consequences of the world economy as normal, expectable and natural (Hornborg, 2016, pp.3-4).

The pan-humanism of the human epoch reflects and shores up the neoliberal, individualist, entrepreneurial forms of “resilience”, “which trade on the notion that if “we” (humans) are *all* to blame for the climate crisis, then *no one* is to blame and, therefore, *no one* is responsible” (Di Chiro, 2017, p.489, emphasis in original), leaving us to our own devices. Moreover, reinforcing these individualistic approaches to climate change responsiveness “stereotypically casts women in the roles of either vulnerable climate victims or hardy climate heroes” (ibid.). I suggest that environmentally friendly restraint from childbearing is one of the best illustrations of the neoliberal, individualist and entrepreneurial forms of “resilience” in the human epoch, which explicitly does not cast females as anything, yet by “leaving us to our own devices” implicitly places female sexuality as a threat to our planet, naturally asking for some supervision. As already established, environmentally friendly restraint from childbearing is not interested in any particularities, since

new humans will continue to multiply emissions and we simply need less of that. It is worth drawing again on the symbolic language of the CO<sub>2</sub> measurements of an unborn child:

*“A person’s reproductive choices must be considered along with his day-to-day activities when assessing his ultimate impact on the global environment.”*  
(Murtaugh and Schlax, 2009, p.1).

Reproduction in the (m)Anthropocene is therefore a paradoxical tragedy. The paradox is that the human-dominance seems to have led to no need of humans. And the tragedy is that it is enhancing the ideology which led us here. In this section, I have tried illustrating that (m)Anthropocene represents the history of capitalism with all its attributes, and it is a context where such recommendations as “have one fewer child” are able to make sense. Since the very framework of life in the Anthropocene is destabilized, and the biggest threat to it is the human species, it is fair to expect an increase of interest in the right kinds of “person’s reproductive choices”. The (m)Anthropocene implicitly gives females a special role – their wombs become determinate factor of our bright future, as they voluntarily not give birth to CO<sub>2</sub>.

## 6. Conclusions

During the process of writing this thesis, I was working at a non-governmental environmental organization. My boss would often ask for a reminder on what my thesis was about, as I always mumbled something vague about the climate crisis, a feminist angle, and that it is complicated. Once, though, I did mention that I am critical towards the suggestion to restrain from children as by itself positive for the climate, to which she replied smilingly: “But it’s simple – it’s math”. The goal of this study was, along this line, essentially to denaturalize the idea that having fewer children is an environmental solution by any stretch of the imagination, and to show that it must be understood in the socio-political and historical contexts.

Drawing on critical discourse analysis, I have shown that “have one fewer child” is constructed as logical through a combination of these main pillars: 1) individualization and commodification of environmentalism, which allows to consider individual lifestyle choices as



important contributions to fighting climate change, and simultaneously places responsibility for the cause of climate change on individual actions; 2) neo-Malthusian assumption that no matter how we look at it, human numbers will continue to multiply emissions which we urgently need much less of; and 3) de-politization and commodification of carbon emissions, which allow for a cold calculus of an unborn child in emissions savings (and a newborn child as emissions release). Whilst advising how to (not) reproduce and evoking moral obligation to follow the advice, this research is explicitly positioned as a value-neutral scientific account on the ways to contribute to carbon emissions reduction. I have argued that this is particularly problematic because it ignores any gendered and other contextual dimensions of childbearing, thus naturalizing a very instrumental treatment of procreation, children and environmental solutions. It is neoliberal in a sense that it accelerates the commodification of environmentalism through a radical emphasis on the individual, but also because it treats childbearing as any other everyday (purchasing) activity and as an accumulation of one's consumption patterns.

To further unravel the implications of this narrative, I drew on historical and political arguments regarding the subordinate nature of reproduction to females in capitalism; the science-led state (and environmental) interests in childbearing; and the liberal self-controlling individual inherently able to and *ought to* control one's biological functions, including births. I suggested that a gender-neutral scientific intention to regulate childbearing (through constructing moral obligation and, potentially, through governmental and textbook recommendations), not only ignores the patriarchal history of reproduction within capitalism, but also legitimizes the structural setting which this history has created. That is, namely, "the gendered, racialized, and exploitative global capitalist system that is driving ecological and climatological destruction" (Di Chiro, 2017, p.489).

I thus argued that environmentally friendly restraint from children is neither individual nor gender-neutral, as it implies that female bodies and sexual life *should* serve our common good and are in need of management. Moreover, conflating a newborn child with planetary destruction implicitly positions female bodies as CO<sub>2</sub> emitters, which makes them likely to be perceived more destructive than male ones. It also essentially re-defines the parent-child relationship as it has now become best described through CO<sub>2</sub>. Environmentally responsible individual is constructed,

though, as voluntarily choosing which lifestyle purchases to make to reduce carbon emissions. And there is luckily scientific material now to consult on these choices.

I have also proposed that a de-contextualized abstract individual restraining from childbearing for environment's sake is a well-fit character of the (m)Anthropocene era, or more like a *child* of this era, as it can only be born and thrive in a homogenizing, abstracted, exploitative global capitalist context, which has amnesia on how it came about. This individual is naturally tied with CO<sub>2</sub> emissions, is inherently destructive, and *ought* to protect the planet from *himself* in the present, to *himself* in the future. "Have one fewer child" thus enhances the Anthropocentric paradox of not needing inherently destructive humans in a human-dominated era, which implies a potential increase of interest in how *an individual* should or should not reproduce.

## Bibliography

Appadurai, A., 1986. *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge University Press: Cambridge.

Appadurai, A., 2019. Chapter 5: Taking on big oil by looking within. In Bhavnani, K-K., Foran, J., Kurian, P.A., and Munshi, D. (eds). *Climate Futures – Re-imagining Global Climate Justice*. Zed Books Ltd: London.

Bookchin, M., 1989. *Death of a Small Planet: It's Growth that's Killing Us*. Available at: <<https://theanarchistlibrary.org/library/murray-bookchin-death-of-a-small-planet.pdf>> [Accessed 8 June 2020]

Briggs, Ch. L., 2004. Malthus' Anti-Rhetorical Rhetoric, or, on the Magical Conversion of the Imaginary into the Real. In Szreter, S., Sholkamy, H. and Dharmalingam, A. (eds.) *Categories and Contexts: Anthropological and Historical Studies in Critical Demography*, [e-book]. Available through Lund University library database (LUBsearch) <<https://www.lub.lu.se/en/>> [Accessed 26 April 2020] pp. 57-76.

Brown, W., 2006. American Nightmare. Neoliberalism, Neoconservatism, and De-Democratization. *Political Theory*, 34(6), pp.690-714. DOI: 10.1177/0090591706293016.

Caffentzis, G. and Federici, S., 2014. Commons against and beyond capitalism. *Community Development Journal* 49(SI), pp. i92-i105. doi:10.1093/cdj/bsu006.

Carabine, J., 2001. Unmarried motherhood 1830-1990: A genealogical analysis. In Wetherell, M., Taylor, S. and Yates, S.J. (eds.) *Discourse as data: A guide for analysis*. SAGE Publications Ltd: London, California, New Delhi. pp.267-310.

Carrington, D., 2017. Want to fight climate change? Have fewer children. *The Guardian*. Available at <<https://www.theguardian.com/environment/2017/jul/12/want-to-fight-climate-change-have-fewer-children>> [Accessed 28 January 2020]

Costa, M.D., 2004 [1994]. Capitalism and Reproduction. *The Commoner*. 8, pp.1-12. Available at: <<https://thecommoner.org/wp-content/uploads/2020/06/Mariarosa-Dalla-Costa-Capitalism-and-Reproduction.pdf>> [Accessed 8 June 2020]

- Crutzen, P., 2002. Geology of mankind. *Nature*, 415, p.23.  
<https://doi.org/10.1038/415023a>.
- Cunha, D., 2015. The Anthropocene as Fetishism. *Mediations*, 28(2), pp.65-77. Available at:<[https://www.mediationsjournal.org/files/Mediations28\\_2\\_06.pdf](https://www.mediationsjournal.org/files/Mediations28_2_06.pdf)> [Accessed 9 February 2020]
- Cuomo, Ch., 2017. Sexual Politics in Environmental Ethics: Impacts, Causes, Alternatives. In Gardiner, S.M., and Thompson, A. (eds.) *The Oxford Handbook of Environmental Ethics*. Oxford University Press, pp.288-300.
- Davin, A., 1978. Imperialism and Motherhood. *History Workshop*, 5, pp.9-65. Available at:<<https://www.jstor.org/stable/4288158>> [Accessed 26 April 2020]
- Di Chiro, G., 2017. Welcome to the White (M)Anthropocene? In MacGregor, Sh. (ed.). *Routledge Handbook of Gender and Environment*, [e-book]. Available through Lund University library database (LUBsearch) <<https://www.lub.lu.se/en>> [Accessed 28 January 2020] pp.487-505.
- Diduck, A. 1993. Legislating Ideologies of Motherhood. *Social & Legal Studies*. 2, pp.461-485.
- Dyett, J. and Thomas, C., 2019. Overpopulation Discourse: Patriarchy, Racism, and the Specter of Ecofascism. *Perspectives on global development and technology* 18, pp.205-224. doi:10.1163/15691497-12341514.
- Edley, N., 2001. Analysing masculinity: Interpretative repertoires, ideological dilemmas and subject positions. In Wetherell, M., Taylor, S. and Yates, S.J. (eds.) *Discourse as data: A guide for analysis*. SAGE Publications Ltd: London, California, New Delhi, pp.189-228.
- Federici, S., 2014. *Caliban and the Witch: Women, the Body and Primitive Accumulation*. 2nd ed. Autonomedia: New York.
- Federici, S., 2018. *Witches, Witch-Hunting, and Women*. PM Press: Oakland, CA, USA.
- Ginsburg, F. and Rapp, R. 1991. The Politics of Reproduction. *Annual Reviews*, 20, pp.311-343.

Giroux, H.A., 2005. The Terror of Neoliberalism: Rethinking the Significance of Cultural Politics. *College Literature*, 32.1, pp.1-19. DOI: 10.1353/lit.2005.0006.

Goodman, M.K., and Boyd, E., 2011. Editorial: A social life for carbon? Commodification, markets and care. *The Geographical Journal*, 177(2), pp.102-109. Available at: <<https://www.jstor.org/stable/41238018>> [Accessed 26 April 2020]

Hamilton, S. 2017. Securing ourselves *from* ourselves? The paradox of “entanglement” in the Anthropocene. *Crime Law Soc Change*, 68, pp.579-595. DOI 10.1007/s10611-017-9704-4

Hammersley, M. and Gomm, R., 1997. Bias in Social Research. *Sociological Research Online* 2(1). Available at <<http://www.socresonline.org.uk/2/1/2.html>> [Accessed 23 February 2020]

Harvey, D. 1974., Population, Resources, and the Ideology of Science. *Economic Geography*, 50(3), pp.256-277.

Hornborg, A., 2016. *Global Magic: Technologies of Appropriation from Ancient Rome to Wall Street*. Palgrave Macmillan.

Jakobsson, C., 2017. Personal choices to reduce your contribution to climate change, viewed 11 February 2020, available at: <<http://www.kimnicholas.com/uploads/2/5/7/6/25766487/fig1full.jpg>>. Data from Wynes, S. and Nicholas, K.A. 2017. The Climate Mitigation Gap: Education and Government Recommendations Miss the Most Effective Individual Actions. *Environmental Research Letters* 12(7), pp.1-9.

Jordanova, L., 1995. Interrogating the Concept of Reproduction in the Eighteenth Century. In Ginsburg, F.D. and Rapp, R. (eds.) *Conceiving the New World Order: The Global Politics of* University of California Press: Berkeley, Los Angeles, London, pp.369-386.

Jørgensen, M.W. and Phillips, L.J., 2002. *Discourse Analysis as Theory and Method*. SAGE Publications: London, Thousand Oaks, New Delhi.

Katz, C., 2001. Vagabond Capitalism and the Necessity of Social Reproduction. *Antipode*. 33(4), pp.709-728. <https://doi.org/10.1111/1467-8330.00207>

Laclau, E. and Bhaskar, R., 1998. Discourse Theory vs. Critical Realism. *Alethia*, 1(2), pp.9-14. DOI: 10.1558/aleth.v1i2.9.

LeBaron, G., 2010. The political economy of the household: Neoliberal restructuring, enclosures, and daily life. *Review of International Political Economy*, 17(5), pp.889-912. DOI: 10.1080/09692290903573914.

Levitsky, S. and Way, L.A. 2015. *Not just what, but when (and how): comparative-historical approaches to authoritarian durability*. In Mahoney, J. and Thelen, K. (ed.). *Advances in Comparative-Historical Analysis* [e-book]. Cambridge University Press. Available through: Lund University Library catalogue (LUBcat) < <https://lubcat.lub.lu.se/>> [Accessed 23 February 2020] pp.97-120.

Lugones, M. 2010. Toward a Decolonial Feminism. *Hypatia*, 25(4), pp.742-759, <https://doi.org/10.1111/j.1527-2001.2010.01137.x>

MacGregor, Sh., 2010. 'Gender and climate change': from impacts to discourses, *Journal of the Indian Ocean Region*, 6(2), pp.223-238, DOI: 10.1080/19480881.2010.536669.

Malm, A., 2016. *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*. Verso.

Malm, A., 2018. *The progress of this Storm: On the Dialectics of Society and Nature in a Warming World*. Verso.

Malthus, T., 1998 [1798], *An Essay on the Principle of Population*. Electronic Scholarly Publishing Project. Available at:<<http://www.esp.org/http://www.esp.org/books/malthus/population/malthus.pdf>> [Accessed 26 April 2020]

Maniates, M.F., 2001. Individualization: Plant a Tree, Buy a Bike, Save the World? *Global Environmental Politics*, 1(3), pp. 31-52. <https://doi.org/10.1162/152638001316881395>

Merchant, C.,1980. *The Death of Nature*. Harper and Row: San Francisco.

Mies, M. 2002., Chapter 6: 'Gender' and global capitalism. In Sklair, L. (ed.) *Capitalism and Development* [e-book], Available through Lund University library database (LUBsearch) <<https://www.lub.lu.se/en>> [Accessed 26 April 2020] pp.107-122.

Moolna, A., 2012. Making Sense of CO<sub>2</sub>: Putting Carbon in Context. *Global Environmental Politics*, 12(1), pp.1-7. DOI: 10.1162/GLEP\_a\_00094.

Mortimer C., 2017. Having children is one of the most destructive things you can do to the environment, say researchers. *Independent*. Available at: <<https://www.independent.co.uk/environment/children-carbon-footprint-climate-change-damage-having-kids-research-a7837961.html>> [Accessed 28 January 2020]

Murtaugh, P.A. and Schlax, M.G., 2009. Reproduction and the carbon legacies of individuals. *Global Environmental Change*, 19, pp.14–20. doi:10.1016/j.gloenvcha.2008.10.007.

Nhanenge, J. 2011. *Ecofeminism: Towards Integrating the Concerns of Women, Poor People, and Nature into Development* [e-book]. Accessed through <[www.google.com](http://www.google.com)> [Accessed 26 April 2020]

Nicholas, K., 2020. Kimberly Nicholas website. Available at: <<http://www.kimnicholas.com/>> [Accessed 2 February 2020]

Ruhl, L., 1999. Liberal governance and prenatal care: risk and regulation in pregnancy. *Economy and Society*, 28(1), pp.95-117. <https://doi.org/10.1080/030851499000000026>.

Ruhl, L., 2002. Dilemmas of the Will: Uncertainty, Reproduction, and the Rhetoric of Control. *Signs: Journal of Women in Culture and Society*, 27(3), pp.641-663. DOI: 10.1080/030851499000000026.

Rukaite, K., 2018. Obscuring the problem: On why we should resist the concept of the Anthropocene. *HEKN11: Culture, Economy and Ecology*. Lund University. Unpublished essay.

Rukaite, K., 2019. Wombs as the commons in the (m)Anthropocene: On the roots of environmentally friendly control over reproduction. *HEKN14: Political Ecology, Crisis, and Identity*. Lund University. Unpublished essay.

Sandilands, C., 1993. On “Green” Consumerism. Environmental Privatization and “Family Values”. *Canadian Woman Studies* 13(3), pp.45-47.

Sasser, J. S., 2017. Sexual Stewardship. In MacGregor, Sh. (ed.). *Routledge Handbook of Gender and Environment* [e-book]. Available through Lund University library database (LUBsearch) <<https://www.lub.lu.se/en>> pp.345-356.

Sasser, J. S., 2018. *On Infertile Ground: Population Control and Women's Rights in the Era of Climate Change*. NYU Press: New York.

Seneviratne, P. 2018. Marxist Feminism Meets Postcolonial Feminism in Organizational Theorizing Issues, Implications and Responses. *Journal of International Women's Studies*, 19(2):186-196. <<http://vc.bridgew.edu/jiws/vol19/iss2/12>>

Steffen, W., Crutzen, P. and McNeill, J. 2007. The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature? *Ambio* 36, pp.614-621. [https://doi.org/10.1579/0044-7447\(2007\)36\[614:TAAHNO\]2.0.CO;2](https://doi.org/10.1579/0044-7447(2007)36[614:TAAHNO]2.0.CO;2)

Steffen, W., Rockström, J., Richardson, K. et al., 2018. Trajectories of the Earth System in the Anthropocene, *PNAS Latest Articles*, pp.1–8. <https://doi.org/10.1073/pnas.1810141115>.

Szreter, S., Sholkamy, H. and Dharmalingam, A., 2004. *Categories and Contexts: Anthropological and Historical Studies in Critical Demography*, [e-book]. Available through Lund University library database (LUBsearch) <<https://www.lub.lu.se/en/>> [Accessed 26 April 2020]

Taylor, S., 2001. Locating and conducting discourse analytic research. In Wetherell, M., Taylor, S. and Yates, S.J. (eds.) *Discourse as data: A guide for analysis*. SAGE Publications Ltd: London, California, New Delhi, pp.5-48.

Thies, C.G. 2002. A Pragmatic Guide to Qualitative Historical Analysis in the Study of International Relations. *International Studies Perspectives* 3, pp.351-372.

Turner, J.M., 2014. Counting Carbon: The politics of Carbon Footprints and Climate Governance from the Individual to the Global. *Global Environmental Politics*. 14(1), pp.59-78. [https://doi.org/10.1162/GLEP\\_a\\_00214](https://doi.org/10.1162/GLEP_a_00214)

van Dijk, T.A., 1995. Aims of Critical Discourse Analysis. *Japanese Discourse* 1, pp.17-27. Available at:<<http://discourses.org/OldArticles/Aims%20of%20Critical%20Discourse%20Analysis.pdf>> [Accessed 28 April 2020]

Veltmeyer, H. and Wise, R.D., 2018. *Critical Development Studies: An Introduction*. Practical Action Publishing.

Wood, E.M., 2017. *The Origin of Capitalism. A Longer View*. Verso: London, New York.

Woodward, A., 2019. More than 11,000 scientists have declared a 'climate emergency.' One of the best things we can do, they say, is have fewer children. *Business Insider*. Available



at:<<https://www.businessinsider.com/scientists-declare-climate-emergency-solutions-fewer-children-2019-11>> [Accessed 28 January 2020]

Wynes S. and Nicholas, K., 2017. FAQ's for Wynes and Nicholas, pp.1-14. Available at:<[http://www.kimnicholas.com/uploads/2/5/7/6/25766487/faqs\\_\\_2\\_.pdf](http://www.kimnicholas.com/uploads/2/5/7/6/25766487/faqs__2_.pdf)> [Accessed 2 February 2020]

Wynes, S. and Nicholas, K.A., 2018. Reply to Comment on 'The climate mitigation gap: education and government recommendations miss the most effective individual actions'. *Environmental Research Letters* 13, pp.1-3. <https://doi.org/10.1088/1748-9326/aab210>.

Wynes, S. and Nicholas, K.A., 2018. Reply to Second comment on 'The climate mitigation gap: education and government recommendations miss the most effective individual actions'. *Environmental Research Letters*, 13, pp.1-3. <https://doi.org/10.1088/1748-9326/aac9cf>.

Wynes, S. and Nicholas, K.A., 2017. The Climate Mitigation Gap: Education and Government Recommendations Miss the Most Effective Individual Actions. *Environmental Research Letters*, 12(7), pp.1-9. DOI: 10.1088/1748-9326/aa7541.