Applying Bostrom's Reversal Test to check the Principle of Procreative Beneficence's major critiques for the Status Quo Bias.

By

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Abstract

Julian Savulescu believes parents have a moral duty to use reproductive technologies like IVF and Prenatal screening to choose the best possible child. According to his principle of Procreative Beneficence, one should select the best child of the possible children one could have. However, this principle has attracted numerous critiques from numerous authors. This paper aims to demonstrate that most critiques suffer from a status quo bias. It means that these critiques overly emphasize the possible negative outcomes concerning the principle of Procreative Beneficence because these critiques have an implicit affinity toward the status quo. The affinity for the status quo renders these critiques unable to appreciate the potential positive outcomes of applying the principle of Procreative Beneficence. Some authors argue that these critiques overemphasize the potential negative outcomes. I employ Nick Bostrom's Reversal Test to check these critiques for implicit Status Quo Bias. In Bostrom's Reversal Test, we consider the desired trait, often a positive deviation from the status quo. Suppose we find selecting the embryo with the desired trait ethically contentious. In that case, we imagine selecting an embryo that lacks that desired trait and is a negative deviation from the Status Quo. If we find the latter also problematic, we conclude that choosing the embryo with the desired trait seems ethically contentious because of our affinity to the Status Quo, also called the Status Quo Bias. The thesis accomplishes two tasks. First, it analyzes the various critiques for the Principle of Procreative Beneficence. Second and last, it employs Bostrom's Reversal Test to check these critiques for any potential Status Quo Bias and concludes that PPB’s primary critiques do indeed suffer from the Status Quo Bias.

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Statement of Originality

I certify that all of the work described within this thesis is the author's original work. Any published (or unpublished) ideas and/or techniques from the work of others are fully acknowledged in accordance with standard referencing practices.

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Introduction

As parents, it is ingrained in us to want the best for our children and their future, which drives us to go to great lengths to ensure their wellbeing and success. The advancement in reproductive technologies makes it possible for parents to choose an embryo with preferred traits from a set of embryos. Specifically, reproductive technologies such as In-Vitro Fertilization (IVF) and Preimplantation Genetic Diagnosis (PGD) allow parents or reproducers to select from a set of potential children. Prospective parents who opt for IVF can have multiple embryos.[1] Additionally, PGD, when used in parallel with IVF, can help choose the embryo to be implanted based on information available regarding the genes of the set of embryos.[2]

This technology has ushered much debate over whether the selection of children by parents is moral and whether this selection should be permitted. For instance, on the one hand, we have parents who use these reproductive technologies to select against cystic fibrosis. On the other hand, we have deaf parents using PGD, not to avoid deafness, but to select it deliberately.[3] The motivations for employing these reproductive technologies to choose an embryo with preferred traits from a set of embryos range from common sense to controversial to counterintuitive.

The emergence of these reproductive technologies has divided ethicists and philosophers into primarily two camps. The first camp consists of philosophers who oppose the use of these technologies. Their positions range from restricting or regulating these technologies to prevent possible harm to the other view that these technologies should not be employed for selection

[1] See Choe and Shanks, 2022.
[2] See Geraedts and Wert, 2009.
[3] See Chen, 2021.

because it is morally wrong for parents to select the kinds of children they have.[4] Nevertheless, a second camp of perspectives defends parental selection and the use of reproductive technologies based on their potential to reduce suffering and embrace reproductive autonomy.[5]

The philosopher Julian Savulescu, who belongs to the latter camp, has put forward a principle that not only should the selection be morally permitted, but parents are morally obligated to select the best child they can have, using the available reproductive technology and information concerning the embryo.[6] It is called The Principle of Procreative Beneficence (henceforth PPB). PPB has generated much debate over whether the selection of children by parents is moral and whether it should be permitted.[7]

Some philosophers outrightly reject the PPB. There is a broad spectrum of positions against the PPB. For instance, one cluster of philosophers questions PPB's theoretical foundation and coherence.[8] Others have argued that the principle cannot describe a genuine moral obligation because it has morally reprehensible implications.[9] Lastly, a centrist position on PPB maintains that selection should only be used to eliminate debilitating diseases and not to pursue the best.[10]

This thesis attempts to devise a tool to differentiate between successful and unsuccessful lines of PPB's critique in a fresh manner. I accomplish this by inviting us to think about PPB's critique by applying Reversal Test to its critiques to check whether these critiques suffer from

[4] The former position includes authors like Adrianne Asch who maintain that selection must be restricted or regulated to prevent possible harm. While latter position includes thinkers like Michael Parker argued that the use these technologies for selection is not only suboptimal but self-defeating and paradoxical.
[5] See Smith, 2012.
[6] See Savulescu, 2001.
[7] From here onwards, I will refer to the Principle of Procreative Beneficence as PPB.
[8] Robert Sparrow and Rebecca Bennett have suggested that this principle reeks of 20th century eugenics that unjustifiably favours one set of traits over the others.
[9] See Parker, 2007.
[10] See Holland, 2016.

potential Status Quo Bias. [11] I employ the Reversal Test to see whether these critiques are motivated by genuine concern for well-being, or are mere symptoms of the Status Quo Bias. Let me unpack these ideas.

Status Quo Bias is the irrational preference for an option that preserves the status quo.[12] I suspect that owing to SQB, many of the PPB's critiques overly emphasize the principle's possible negative outcomes. The affinity for the status quo renders the critiques unable to acknowledge the potential positive outcomes of applying the PPB.[13]

That is where Nick Bostrom's Reversal Test becomes handy; to check whether PPB's critiques are motivated by SQB. I employ Bostrom's Reversal Test to check these critiques for the implicit SQB.[14] Let us understand how one can apply RT through an example. Let us first consider a desired trait, a positive deviation from the status quo, in the embryo. Suppose we find selecting the embryo with the desired trait ethically contentious. In that case, we imagine selecting an embryo that lacks that desired trait and is a negative deviation from the status quo. If we find the latter also problematic, we conclude that choosing the embryo with the desired trait seems ethically contentious because of our affinity to the SQB. My thesis primarily accomplishes two tasks. First, it analyzes PPB's various critiques. Second, it employs Bostrom's RT to check these critiques for potential SQB.

For my thesis, I adhere to the following structure. In the first chapter, I outline the PPB. I explain the nature of its moral obligation and lay out the argument that Savulescu uses to defend

[11] From here onwards, I will refer to the Status Quo Bias as SQB.
[12] See Miceli and Suri, 2022.
[13] See Hofmann, 2020.
[14] From here onwards, I will refer to the Reversal Test as RT.

PPB. In the second chapter, I explicate PPB's four main critiques: Disability Rights Critique, PPB's inherent indeterminacy, PPB's logical flaws, and PPB's vain pursuit.

The first critique, the Disability Rights critique, argues that prenatal testing for disabilities can lead to discrimination against people with disabilities by implying that their lives are of lesser value and reducing the number of people with disabilities. For example, Erik Parens and Adrienne Asch propose a disability rights critique of prenatal testing that emphasizes the value of all human life and the need for a more inclusive approach to disability.[15] They recommend that prenatal testing be accompanied by non-directive counselling and that policymakers and healthcare providers work to improve the quality of life for people with disabilities. Savulescu responds by arguing that it would be drastic to inflict a higher risk of having a child with a disability on a couple who do not want a child with a disability only to communicate the value of disabled people's lives; he argues that there is a difference between an individual choice and a broader comment on the value of lives with various disabilities.[16] Savulescu is critical of the Disability Rights critique and argues that it is difficult to balance the welfare of offspring and the sentiments of disabled people.

The second most common critique of PPB is that it is indeterminate and cannot be applied in a real-world context. This argument takes two forms. In its first form, the argument is that ranking possible lives based on genetic testing is not straightforward, as the concept of what constitutes a good life is complex and cannot be reduced to a set of simple genes or traits.[17] The second argument holds that PPB is not a requirement, as Savulescu has not effectively demonstrated the distinction between moral reasons and moral obligations.[18] The concept of

[15] See Parens and Asch, 2003.
[16] See Savulescu, 2001.
[17] See Parker, 2007.
[18] See Saunders, 2015.

supererogation adds a nuanced perspective to the debate, allowing for a more thorough understanding of what is considered morally commendable versus what is required. Saunders' critique of Savulescu's argument for PPB underscores the need for a more nuanced and flexible approach to moral reasoning**.**

The third critique of PPB constitutes two arguments. The first argument maintains that PPB relies too heavily on intuition and lacks a logical foundation, particularly in its response to the Non-Identity Problem.[19] The second argument challenges the maximization view of consequentialism and raises questions about the value of seeking more than enough and the implications of this pursuit on our moral and ethical beliefs.[20] The argument maintains that PPB's logic is flawed because it fails to consider the concept of the "satisficing option."

The fourth and last argument against pursuing PPB takes two forms. First, pursuing the "best possible life" is self-defeating and can lead to dissatisfaction and difficulty forming stable relationships.[21] Secondly, critics argue that PPB's pursuit of the best is overly individualistic, discounts social context, does not consider interpretations of the good life and that PPB's obligations vary between contexts. These critics believe pursuing PPB's best is futile and can negatively impact a child's wellbeing.

In the third chapter, I explain the SQB and outline Bostrom's RT in detail. In the fourth chapter, I employ RT on the PPB's critiques to elucidate any potential SQB. In the fifth chapter, after applying Bostrom's RT to the critiques for the PPB, I conclude that most of these critiques suffer from an implicit status quo bias.

[19] See Bennett, 2009.
[20] See Holland, 2006.
[21] See Parker, 2007.

Chapter 1: The Principle of Procreative Beneficence.

In this chapter, I explicate the Principle of Procreative Beneficence.[22] Specifically, I lay out the theoretical foundation of PPB, why it was proposed, and how it compares to other reproductive principles.

The Background

Julian Savulescu developed this principle in his 2001 book *Procreative Beneficence: Why We Should Select the Best Children.*[23] According to this principle, "couples (or single reproducers) should select the child of the possible children they could have, who is expected to have the best life, or at least as good a life as the others, based on the relevant, available information." To facilitate understanding the PPB, I will break down this principle into smaller parts, starting with what it means to "select" when Savulescu suggests that couples (or single reproducers) should select. Addressing this question requires considering emerging reproductive technologies such as IVF and PGD. In vitro fertilization (IVF) combines the egg with sperm in vitro, or outside the living organism, to create multiple embryos outside the human body.[24] When Savulescu expects the parent(s) to 'select' the child, he suggests employing IVF to select from embryos produced in vitro, or outside the womb.[25]

How does one separate one embryo from the other? It is where Preimplantation Genetic Diagnosis (PGD) becomes instrumental.[26] PGD is the genetic profiling of embryos before their implantation in the womb. It is worth mentioning that one could also perform PGD on the ovum

[22] From this point, I will abbreviate the Principle of Procreative Beneficence as PPB.
[23] See Savulescu, 2001.
[24] See Eskew and Jungheim, 2017.
[25] It is worth making explicit that IVF and PGD can be employed equally by fertile, infertile, same-sex couples or single parents by choice.
[26] Henceforth, I will refer to Preimplantation Genetic Diagnosis as PPB.

or the sperm before fertilization.[27] Through PGD, one can sequence the DNA of embryos to select against genetic conditions (for instance: sickle cell disease and cystic fibrosis) that might manifest as chronic conditions and disabilities.[28] Based on genetic information, one may select one embryo over the other.[29] So, when Savulescu is speaking of selecting children, he refers to choosing the embryos based on genetic profiling. It is worth mentioning that many thinkers find the selection of embryos problematic. I mention briefly a few objections here, only to contour the terrain of PPB's theoretical foundation.[30] Nevertheless, I will cover PPB's objections in detail in the second chapter.

What does 'best' mean?

Let us now understand what Savulescu means by the phrase "who is expected to have the best life" in PPB. It is worth noting that, first, he argues against embryos with disease genes, as diseases significantly negatively affect a child's wellbeing. A disease gene is a gene which causes a genetic disorder (e.g., cystic fibrosis) or predisposes to the development of disease (e.g., the genetic contribution to cancer or dementia) and consequently negatively affects the individual's wellbeing. After sufficiently establishing the case for selecting against the disease genes, Savulescu extends this rationale to argue that non disease genes, like disease genes, affect the individual's wellbeing. A non disease gene is a gene which causes or predisposes to some physical or psychological state of the person, which is not itself a disease state, e.g., height, intelligence, or character (not in the subnormal range). To support the claim that non disease genes, like disease genes, affect the individual's wellbeing, Savulescu demonstrates that genes related to memory,

[27] See Sullivan-Pyke, Chantae, and Dokras, 2018.
[28] Additionally, prospective parents can also select traits such as the sex of the embryo by employing IVF and PGD.
[29] To limit the scope of this discussion, I will refer to the version of PGD that profiles the embryo post-fertilization because one can perform PGD on sperm and eggs also.
[30] I follow a dynamic strategy where I explain this principle by not only telling what it is but also what it's not.

intelligence, and aggression, among others, affect the prospect of living the 'best' life defined based on the various theories of wellbeing.[31]

To augment the resolution of our understanding of PPB, I anticipate and highlight potential problems with identifying the 'best' life. First, one may question who defines the best. This question becomes crucial in light of the horrors of 20th-century eugenics. Savulescu is mindful of this concern and claims that PPB differs from 20th-century eugenics because the latter is a public interest justification for interfering in reproduction compared to PPB, which aims at producing the best child of the possible children a couple could have. In other words, PPB does not coerce but, on the contrary, augments parental autonomy and control over the kind of children parents could have; this observation is exemplified by Savulescu's position that couples be allowed to make their own decisions about which child to have. Further, Savulescu differentiates PPB from 20th-century eugenics by citing and agreeing with Buchanan et al. in his original paper that for public policy purposes, there should be a presumption in favour of liberty in liberal democracies.[32] Additionally, he argues that the role of democracy is to provide people with general purpose means, i.e. those useful to any plan of life. In this way, we as a society can allow people to form and act on their own conception of the good life.

Second, one could still argue that how parents define the 'best' life is not straightforward and, as a result, not helpful.[33] Savulescu suggests defining the 'best' in terms of wellbeing by various theories such as hedonism, desire-fulfilment and objective list. For instance, under the framework of hedonism, human beings always pursue what they think will give them the greatest

[31] See Savulescu, 2001.
[32] See Savulescu, 2001.
[33] I want to make it clear that I am not exploring potential objections. I am merely explaining his principle by method of raising questions to explore the nuances.

balance of pleasure over pain. In comparison, the desire-fulfilment theory holds that the fulfillment of a desire contributes to one's happiness regardless of the amount of pleasure. On the other hand, the objective list theory of wellbeing holds that a plurality of basic objective goods directly benefit people.[34]

Savulescu argues that choosing disease and non-disease genes could potentially affect the child's probability of living the 'best' life as informed by any of the theories of well-being. Per PPB, it's up to the parents how they define wellbeing; these theories are supposed to provide a clue of how wellbeing could look, and this is how they differ from state-sponsored eugenics in that they allow parents to define 'best' in their terms.

Further, Savulescu and Kahane anticipate a potential objection that PPB allocates more responsibilities to prospective parents, where there is a potential to abuse those responsibilities. For instance, parents might be influenced by fashion, superstition and outlandish conceptions of the good life but create children with horrible prospects. However, Savulescu and Kahane point out that this problem is not unique to PPB; parenting, in general, does place significant responsibilities in the hand of parents.

How does one compare?

Let us revisit the principle. As per PPB, "couples (or single reproducers) should select the child of the possible children they could have, who is expected to have the best life, or at least as good a life as the others, based on the relevant, available information." Now let us consider the remaining component: "at least as good a life as the others, based on the relevant, available information." Understanding this component is crucial because of the following reasons.

[34] See Hurka, 1996.

First, one might wonder why we should bother with the condition to select a child that has at least as good a life as the others. Why not make the principle simple by only requiring to choose the child predisposed to have the 'best' life? To understand the significance of this component, I highlight Savulescu's anticipated conflict between PPB and other principles. He explicitly states that in the absence of some other reason for action, a person with good reason to have the best child is morally required to have the best child. He also clarifies the normative force of this principle; PPB is not demanding or coercing to unequivocally select the child with the prospect of the best future. Specifically, through examples, he demonstrates how the reproductive principle of Procreative Autonomy could conflict with PPB. He explains through an example that a couple suffering from Skeletal Dysplasia, David and Dianne, use IVF and PGD to select a child with Skeletal Dysplasia because their house is set up for people suffering from skeletal dysplasia. Savulescu argues that by selecting, they would not harm the child brought to existence but still, their choice conflicts with PPB. I think the condition "at least as good a life as the others" is a safety check for reproductive principles that could go against the wellbeing of the potential child.

Nevertheless, we could also see this component limiting a principle, say reproductive autonomy, to not deviate too much from the child's wellbeing but select a child who is at least as good a life as the others, if not the best. Now one could question whether this means that, under this principle, couples suffering from skeletal dysplasia and deafness cannot select a dwarf and deaf child, respectively. Savulescu would say no because he admits that PPB should be balanced against other principles. He acknowledges that this 'balancing' implies that those with disabilities should be allowed to select a child with a disability if they have a good reason. For instance, a deaf couple may choose a deaf child because it is more likely that child will become a part of the deaf community and that deaf parents are more likely to adequately cater to the needs of a deaf child

than a non-deaf child. In my understanding, under PPB, the prospective parents need to have a good reason to deviate from selecting the child with the prospect of the best future, and the good reason is still checked by PPB's condition to choose a life at least as good as the others. Nevertheless, Savulescu does admit that there are no simple answers when other principles conflict with PPB.

After establishing the significance of the condition that one must select the child predisposed to have at least as good a life as the others, the following concern arises; how does one compare and rank the lives? I divide this concern into the following two aspects. First, what is the sample set of others? I suspect that by 'others,' Savulescu refers to the majority or general traits (of a child) distributed normally. For instance, most people's height ranges from 5 to 6 ft. Similarly, there are ranges for other traits also. I think that by 'others,' Savulescu refers to the people (majority) that fall under these ranges.

Now, one might question what if the majority share an undesirable trait. For instance, most die before reaching the age of 100; would a genetic composition that enables one to live up to 150 years be considered undesirable? Savulescu would disagree because he is asking to choose a life at least as 'good,' not the 'same' as others. He would suggest selecting an embryo that at least possesses the average lifespan; an extended lifespan is a bonus. Also, he informs his definition of 'good' by employing the various theories of wellbeing; I agree that he is asking to compare to only the 'good' in others' life. For instance, he would oppose selecting a child with a genetic disorder that would severely limit the child's wellbeing on all accounts of the various theories of wellbeing, even if the condition was common.

Second, one might still ask, even considering the possibility of relying on the numerous theories of wellbeing, how can one know that a child will have a good life? I would argue that

there is no absolute and objective way of knowing whether others (future lives) are living a good life; we can only assume or predict. Nevertheless, this inaccessibility to the phenomenal experience of others does not weaken but only strengthens the PPB by enabling the prospective parents to formulate their conceptions of a 'good' or a 'best' life based on their preferences and perception of the child's welfare. This seeming ambiguity, let's better call this flexibility, is the feature that restricts the PPB from becoming a eugenic nightmare from the 20th century. Otherwise, it will be difficult to stop the institutions, including governments and legal systems, from coercing prospective parents to choose the 'good' if we had the exact definition of the 'good.' The indecisiveness and the ambiguity allow the prospective parents to exercise their autonomy and free will to define and choose the embryo with the prospect of the 'best' life.

What gaps does PPB fill?

Now I want to bring our attention to the gap PPB fills; how is PPB different from other reproductive principles? What new perspective does PPB bring to the table? I will juxtapose PPB with other reproductive principles to highlight PPB's uniqueness. To start with, we should ask what moral intuition does PPB capture? To address this question, Savulescu provides two examples in his paper.

First, he cites Derek Parfit's example of a small town's government that utilizes nuclear power desperately to meet the town's energy requirements.[35] However, a nuclear accident leads to the birth of abnormal children. Parfit argues that these children have not been harmed by the nuclear accident unless their lives are worse than not existing in the first place. Only those can be said to be harmed whose pain and suffering make death preferable to living. However, despite no

[35] See Parfit, 1987.

harm, most people would still object to this nuclear accident. Savulescu argues that this is precisely the gap that the PPB fills.

Second, he gives another example of Parfit, a woman suffering from the disease Rubella. If she gives birth to a child while suffering from Rubella, the child born will be deaf and blind. However, if she waits three months to conceive, the child will not be deaf or blind. Nonetheless, if she still chooses to give birth to the child while suffering from Rubella, she would not be harming the child unless the child suffers from so much pain that the child prefers death over life. Nevertheless, we still feel something problematic in the woman's decision not to wait and become pregnant to give birth to the child. To justify this moral intuition, we must appeal to some harmless wrongdoing. Savulescu's PPB captures this intuition perfectly.

PPB vs Others

In light of the moral intuition PPB captures, let us now juxtapose PPB with other principles concerning reproductive decision-making. The first one is the principle of Procreative Autonomy. According to this principle, reproducers can choose how, when and what kind of children they can bring into existence.[36] Under this principle, the women with Rubella would not be in the wrong to give birth to children with genetic disorders. If the child later prefers existing over non-existence, we cannot appeal to any harmless wrongdoing. Unlike the PPB, the principle of Procreative Autonomy does not capture our moral intuition.

The second rival principle is the principle of non-directive counselling. Under this principle, medical professionals and counsellors should only provide information about risk and

[36] See Mills, 2013.

options available to reduce that risk.[37] They should not advise or direct the reproducers. If the woman with Rubella decides to give birth even after being provided with information about risk and options available to reduce that risk, she would not be in the wrong. Anything goes as long as it's the parent's informed choice; it is not very different from Parfit's example of the nuclear accident that fails to establish harmless wrongdoing (or that something wrong has been done) as long as the children prefer life over death. This principle, too, fails to capture our moral intuition that harmless wrongdoing has been done.

The third is the best interest of the child principle that, more or less, considers the welfare and interests of any person born or to be born as paramount.[38] This principle only emphasizes that whomever the reproducers decide to bring into the world, the reproducers should make the welfare and the interest of the yet-to-be-born foremost. Under this principle, the woman with Rubella can still give birth to a child born with deafness and blindness, making that child's welfare and interests paramount without her being wrong. Under this principle, there is no harmless wrongdoing to the child born with Rubella-induced deafness and blindness. Yet we still feel that this is a morally undesirable consequence. It is analogous to what one feels about Parfit's nuclear accident example. One feels that some harmless wrongdoing has been committed but cannot pinpoint it. PPB captures this intuition well.

It becomes evident that all the current principles of reproductive decision-making fail to appeal to harmless wrongdoing; this is where the PPB fills the gaps. So far, PPB is the only principle that captures the moral intuition of harmless wrongdoing in bringing future children into existence.

[37] See Gamble et al., 2002.
[38] See Parker, 1994.

Savulescu's Anticipated Concerns for PPB

In the last section of this chapter, I will steer our attention to four PPB's concerns that Savulescu anticipated in his paper *Procreative Beneficence: Why we should select the best children*. I will briefly address these objections to help us clarify PPB's conceptual boundaries.

The first concern is the simple case of not selecting disease genes. Savulescu makes the case that if there are two embryos where one embryo has a genetic predisposition to develop the respiratory disease of Asthma, everything else being equal, we should select against the embryo genetically predisposed to develop Asthma. He anticipates that a critic might object to this selection by presenting a possibility of an embryo with Asthma becoming a genius or talented person like Mozart.[39] In response to the hypothetical critic, Savulescu claims that an embryo without the genetic disposition to Asthma has an equal chance of becoming a Mozart. Further, this child will be a Mozart without Asthma, which is a better option. Further, to support his claim, he employs Parfit's two examples, the nuclear accident and the Rubella case, that I described in the earlier portion of the chapter. By utilizing these examples, he argues that even if the child with Asthma turns out to be Mozart and the parents are proud of their child, there is still something problematic, as in the case of children born after the nuclear accident and children born with Rubella-induced congenital disability. Savulescu appeals to moral intuition of harmless wrongdoing to argue for selecting against embryos with disease genes. It is worth mentioning that Savulescu uses this counterargument to advance the case for PPB.

The second concern is the potential objection to the case of selecting nondisease genes. Savulescu defends PPB and makes a case for the selection of non-disease traits by building on the

[39] I think this example, is not solely arbitrary and random. Wolfgang Amadeus Mozart battled lifelong respiratory and other illnesses.

example where he argues that selecting an embryo free of the genetic trait predisposing one to Asthma is moral. He argues that Asthma-causing genes can influence an individual's prospect for wellbeing, the same way nondisease genes can affect one's wellbeing. He provides specific examples from behavioural genetics, highlighting how certain genes can lead to corresponding behavioural characteristics, including susceptibility to addiction, anger modulation, memory and intelligence. He argues that even though lack or abundance in the values of these parameters would not necessarily correspond to how we understand the notion of disease, these traits influence one's wellbeing. He provides an example demonstrating that a person with poor impulse control or memory would affect their wellbeing. He anticipates the following counterarguments to his claim of selecting nondisease genes. The first counterargument is potential harm to the child. One could argue that employing costly reproductive technologies such as IVF and PGD could make parents overbearing and amplify their expectations of their children; in the worst cases, it can affect the love towards the children if they do not fulfill those expectations. Savulescu responds to this objection by pointing out that parents love their children even if they are born with a disability.

Nevertheless, one could still argue that by selecting the embryo, parents are closing off children's future by not respecting children's right to an open future. Savulescu doesn't address this anticipated objection explicitly in this paper. However, I can easily imagine Savulescu responding that the genome already closes the future even if parents didn't select it. There is no open future; even without the use of reproductive technology, children do not choose their genetic predisposition; they do not choose their eye colour, height or behavioural characteristics.

The last version of this objection is the argument that one could harm the child by selecting a specific genetic composition. For instance, one chooses the embryo without any predisposition to Asthma. Nevertheless, the child still develops Asthma or a worse condition such as cancer.

Savulescu responds by pointing out that, in this case, one has not actually harmed the child who developed Asthma because the child would not have existed in the first place if the parents didn't choose that particular embryo until that child preferred to live over not existing. In support of Savulescu, I would argue that it could have also been that the embryo with Asthma also develops cancer late; now, the child has two diseases. The second counterargument to selecting nondisease genes is that it will promote or increase inequality. For instance, few can afford these expensive technologies and select advantageous physiological and psychological traits that would further the disparity. Specifically, Savulescu speaks about the Disability Discrimination Critique, which maintains that testing for disabilities discriminates against disabled people for two reasons. The first is that it makes a negative statement about the worth of disabled people's life. The second is that it reduces the number of people with disability. Savulescu responds by claiming that encouraging parents to have children born with a disability is an extreme step in service of equality. He maintains that by selecting against disability, one is not evaluating disabled people's life worth but their condition. He provides the example of people with paraplegia. To attempt to prevent accidents that cause paraplegia is not to devalue people with this condition but only to prevent this condition. He points out that it is crucial to differentiate disabilities from people with disability.[40]

To recapitulate, I laid out the theoretical foundations of PPB in this chapter. Specifically, I outlined the context in which PPB becomes relevant by juxtaposing it with other reproductive principles. I took the PPB, broke it down into smaller components and toured the nuances of this principle by asking questions from different angles and answering them. After clarifying the

[40] I will expand more this point in later chapter.

principle's significance sufficiently, I will move on to the next chapter, exploring PPB's four main critiques.

Chapter 2: The four critiques of the Principle of Procreative Beneficence.

In the previous chapter, I outlined PPB in detail.[41] In this chapter, I explore some of PPB's critiques. Needless to say, the PPB is not universally accepted and is a controversial ethical principle. I will now lay out four common PPB's critiques on which I will apply Bostrom's RT later to see whether these objections have any implicit Status Quo Bias.[42]

1st Critique: Disability Rights Critique

In this section, I will focus on the Disability Rights critique that maintains that prenatal testing for disabilities (for instance, Down syndrome) results in discrimination against those with those disabilities, both by making a statement about the worth of such lives and by the reduction in the numbers of people with this condition. For example, one could argue that employing IVF and PGD to screen out embryos with signs of congenital conditions such as Down syndrome or Cystic Fibrosis might signal an implicit message that the lives of people with Down Syndrome or Cystic Fibrosis are of a lesser value and that we should allow the number of people living with this condition to increase.

Although a couple of authors raise some version of this concern, I find that Erik Parens and Adrienne Asch captured this concern the best in *The Disability Rights Critique of Prenatal Genetic Testing: Reflections and Recommendations.*[43] They discuss the ethical implications of prenatal genetic testing. The authors argue that while prenatal testing can be a valuable tool for expectant parents, it can also be used to discriminate against people with disabilities. They propose a

[41] I abbreviate the Principle of Procreative Beneficence as PPB.
[42] I abbreviate the Reversal Test as RT.
[43] See Parens and Asch, 2003 and see Raz, 2004.

"disability rights critique" of prenatal testing, emphasizing the value of all human life and the need for a more inclusive approach to disability.

The authors recommend that prenatal testing be accompanied by non-directive counselling emphasizing the complexity of genetic information and the variability of outcomes. They also suggest that policymakers and healthcare providers work to improve the quality of life for people with disabilities rather than focusing solely on prenatal testing as a way to prevent disability. The authors emphasize the importance of informed consent, respect for autonomy, and non-discrimination in providing prenatal testing. Overall, their article challenges the idea that prenatal testing is a neutral or purely medical decision and highlights the importance of considering the social and ethical implications of prenatal testing for people with disabilities.[44]

Savulescu responds to the Disability Critique by arguing that it would be a drastic step to inflict a higher risk of having a child with a disability on a couple (who do not want a child with a disability) by not making any intervention by employing reproductive technologies only to communicate that lives of disabled people have equal worths.[45]

Further, we must distinguish between societal and individual values; societal values cannot be imposed on individuals. For instance: it is too much of an ask for ordinary citizens to donate their wealth to eradicate poverty; poverty is a societal issue, not merely individual. I extend the same logic to prenatal selection; prenatal selection is an individual and parental choice, and it is too much of an ask to parents to compromise the welfare of their future children for abstract societal values. Interestingly, we find prenatal selection problematic, but we seem okay with people not donating their wealth and not marrying to resolve social inequalities. We seem to have

[44] See Parens and Asch, 2003.
[45] See Savulescu, 2001.

our objections skewed toward one problem, i.e., prenatal selection. To what extent the Disability Critique suffers from the Status Quo Bias remains to be seen in chapter four, where I apply the Reversal Test to this critique.

Third, I would like to emphasize that Savulescu mentioned in his 2001 article that it is important to distinguish between disability and persons with disability; prenatal selection reduces the former but is silent on the latter's value.[46] I think, at the maximum, it might seem that prenatal selection is evaluating the condition of disabled people, but it is certainly not making a value claim about disabled people or their lives. Savulescu, too, points out that selection does not necessarily imply that the lives of those who now live with a disability are less deserving of respect and are less valuable. He provides the example that to attempt to prevent accidents which cause paraplegia is not to say that people with paraplegia are less deserving of respect. I extend this logic to prenatal selection; we are not expressing any judgment about people with disabilities when we are engaging in prenatal selection. I strongly believe that we have to justify prenatal selection because the notion of prenatal selection is new and is yet to be integrated into the common lexicon.

Personally, I think parental preference should be the guide in navigating this dilemma. I think whenever there is a conflict between societal and parental values, we must default to parents' opinions on what constitutes a good life for their child. It is not controversial to trust parents with their children's welfare; this strategy might not be foolproof, but it is the most reliable option in the market and backed by evolutionary biology.

2nd Critique: PPB's Inherently Indeterminacy

[46] See Savulescu, 2001.

The second most common critique is that PPB is indeterminate and hence cannot be applied appropriately in a real and natural context. This argument takes two forms for two reasons. Let me elaborate.

The first form maintains that ranking possible lives based on genetic testing is not straightforward. The concepts of what constitutes a good life, the best life, and human flourishing are incredibly complex and hence cannot be reduced to a set of simple genes or traits that can be identified through testing embryos. Consequently, the ranking of possible lives based on genetic tests is inherently questionable as it does not accurately reflect the intricacies of what makes a life good or fulfilling. Michael Parker very effectively solidifies this line of thinking in *The Best Possible Child.*[47] To illustrate this point, Parker draws attention to the ongoing debate in psychology and biology over the role of nature versus nurture in determining a person's success and happiness. Some researchers believe that genetic factors dominate, while others argue that environment and upbringing have a more substantial influence.[48] This disagreement highlights the multifaceted nature of what constitutes the best life and the difficulty of concluding what factors contribute most to achieving it. The gap between what constitutes the best life and the difficulty of concluding what factors contribute most to achieving it makes PPB unworkable because parents are unable to trace a link between embryonic traits and the potential of living a fulfilled life.

At first glance, the logic seems convincing. Nevertheless, if we think a bit longer, we'll see the shallowness of this logic once we realize that we already make selections in other contexts where there is no straight link between the final results and their constituents. Let us understand through the following example. A person wants to be successful in terms of money; let us say that

[47] See Parker, 2007.
[48] See Maya et al., 2022.

the person wants to be a billionaire. There are so many factors that lead to this result of becoming a billionaire: for instance, macroeconomic trends, microeconomic patterns, financial competence, work ethic, geopolitical conditions, social skills and connections, nutrition and physical and mental health. One cannot conceive of tracing the end result of becoming a billionaire to one specific factor, say, getting enough sleep or waking up early. Nevertheless, I argue that ignoring any of these factors is counter-intuitive while expecting to realize the goal of becoming a billionaire. I project the same logic to prenatal selection: even though the concepts of what constitutes a good life, the best life, and human flourishing are incredibly complex and hence, cannot be reduced to a set of simple genes or traits that can be identified through testing embryos; nevertheless, genetic traits do have a non-zero contribution toward one's well being; we should not leave any stone unturned when it is about our children's well being. I provide another example to highlight the gap in the critique's logic. One could argue that going by this critique's logic, voting, too, wouldn't make any sense because one would not be able to trace the link between one individual vote and the result of an election comprising of complex factors such as economics, donations to political parties, the success of a campaign, potential international and domestic interference. Going by the critique's logic, one shouldn't vote because the incredibly complex result of an election cannot be reduced to a single vote. Through these examples, I highlight that we often take actions in our daily lives that cannot be clearly correlated to complex goals that we want to realize; nevertheless, we still initiate those actions, and it makes sense to us to do so. Similarly, I argue that even though the factors that constitute a good life are incredibly complex and cannot be reduced to a set of simple genes that can be identified through testing embryos, we must engage in prenatal selection. In chapter four, I apply the Reversal Test to this critique to check if the only reason that we find

reducing complex phenomena to simple components problematic in this case is that we as a society are not accustomed to prenatal selection yet.

The second argument holds that Savulescu has not effectively demonstrated that PPB is a requirement, owing to the lack of consideration for the distinction between moral reasons and moral obligations; there is a need for a more nuanced and well-informed understanding of moral obligation and its relationship to the PPB before making any definitive claims about its obligations. Ben Saunders captures this intuition very well in *Is Procreative Beneficence Obligatory?*[49] According to Saunders, Savulescu assumes that morality requires us to do what we have the strongest moral reason to do, but Saunders disputes this perspective. He explains that many people believe that while we have reasons to perform actions beyond what is morally expected, these actions are not required but considered morally commendable. Saunders highlights that in the liberal tradition, the state's role is limited to maintaining public order, not morality itself. Savulescu aligns himself with this perspective and invokes John Stuart Mill's harm principle, which stipulates that interference with individual liberty is justifiable only if it is necessary to prevent harm to others.[50] Savulescu argues that when conflicting moral reasons do not outweigh the obligation to have the most advantaged child, parents should choose the most advantaged child.[51] Saunders, however, critiques Savulescu for disregarding the concept of supererogation and assuming that a moral reason to select the best child translates to a moral obligation to choose the best child. It makes it difficult to understand what PPB is asking from us. Saunders argues that refraining from acting supererogatory does not require further justification and that parents may choose a child with a less advantageous life simply because of personal preference, which is not morally

[49] See Saunders, 2015.
[50] See Savulescu, 2001.
[51] See Savulescu, 2001.

significant. By ignoring the difference between moral reasons and moral obligations, Saunders believes that Savulescu has not successfully demonstrated that PPB is a requirement and not just morally commendable. To reconcile Savulescu's belief that parents have a significant moral reason to choose the best child with the view held by critics that they are not obligated to do so, Saunders suggests that PPB should be considered supererogatory (morally good but not required).

By making this distinction, Saunders argues that Savulescu has failed to show that PB is genuinely obligatory. Saunders' critique of Savulescu's argument for PB highlights the importance of considering the distinction between moral reasons and moral obligations. Saunders argues that supererogation adds a nuanced perspective to the debate, allowing for a more thorough understanding of what is considered morally commendable versus what is required. His perspective highlights the crucial role a distinction between moral reasons and moral obligations plays in moral reasoning.

However, I find the following issue with the above critique: I see no point in distinguishing between moral reasons and moral obligations unless other competing ethical principles exist. Let me unpack. Savulescu assumes that morality requires us to do what we have the strongest moral reason to do, but the above critique disputes this perspective. The critique maintains that many people believe that while we have reasons to perform actions beyond what is morally expected, these actions are not required but considered morally commendable. For instance, one can extend this critique to argue that although there are moral reasons to help others and be altruistic, we are not ‘required’ to do deeds similar to that of people like Mother Teresa. I see no point in distinguishing between moral reasons and moral obligations because Savulescu does add that when conflicting moral reasons do not outweigh the obligation to have the most advantaged child,

parents should choose the most advantaged child.[52] Savulescu does not require us to apply one principle maximally at the cost of other principles and one's well-being. For instance, Savluescu is not asking potential parents to enroll in expensive services such as IVF and PGD when they cannot afford it, or they can afford it by starving other family members or by stealing the money. Savulescu does give an opening where one could stop short of maximally applying the principle when it is difficult to realize. Therefore, I see the above critique's distinction between moral reasons and moral obligations as redundant. I don't see why one wouldn't act supererogatory if there are no costs to actualize a moral principle maximally. Additionally, I highly suspect the need to distinguish between moral reasons and moral obligations, the introduction of the notion of supererogation, etc., are symptoms of our hesitancy towards the controversial principle of Procreative Beneficence that uncomfortably challenges our Status Quo of non-intervened natural births. That is why I subject this critique to Reversal Test in Chapter Four.

3rd Critique: PPB is not logically sound

This critique attacks PPB's logical foundation and consists of two versions. First, some authors argue that Savulescu's principle is heavily based on intuition rather than sound logical reasoning.[53] For instance, in *The fallacy of the Principle of Procreative Beneficence*, Bennett highlights the need for a more thoughtful and nuanced approach to addressing the complex issues raised by the Non-Identity Problem (NIP).[54] She argues that Parfit's NIP was initially introduced through examples, such as the "Risky Policy" scenario. In this scenario, an individual must choose between two energy policies; one that guarantees security for at least three centuries but bears a

[52] See Savulescu, 2001.
[53] These group include authors such as Rebecca Bennette and Alan Holland.
[54] See Bennett, 2009.

small risk of radioactive contamination in the future and one that is safe but would not improve the quality of life.

Parfit argues that the wrongfulness of choosing a risky policy cannot be explained by person-affecting consequences, thus leading to the moral conclusion that it does not matter which policy is selected, as no individual's situation worsens.[55] Parfit aimed to find a reason, known as Theory X, that would explain our intuition that there is the harm in allowing the creation of impaired lives over unimpaired lives and reject the conclusion.[56] In this dilemma, one must choose between two philosophical options: accepting the conclusion or identifying a flaw in the argument and developing a Theory X that convincingly solves the NIP. Bennett argues that Savulescu fails to accept the conclusion or provide a compelling solution to the NIP; instead, he dismisses Parfit's conclusion and uses the NIP to justify PPB based solely on intuition. This critique purports that this methodology is problematic and calls into question the legitimacy of PPB. Her critique highlights the importance of using logical reasoning and sound arguments when proposing solutions to complex moral dilemmas. The critique argues that intuition alone cannot provide a valid and compelling solution to the NIP and that relying on intuition alone risks relying on subjective interpretations rather than objective reasoning, and that a more rigorous and systematic approach is needed to solve this complex ethical dilemma rather than relying on intuition which may lead to flawed solutions like PPB. The critique emphasizes the importance of a well-defined and thought-out solution grounded in logical reasoning and ethical principles.

So far, I agree with Bennett that PPB is not a rational derivation of the NIP and that it encapsulates the same intuition that Parfit found problematic. I side with her maintaining that PPB

[55] Person-affecting consequences refer to outcomes where real individuals or lives are affected.
[56] I argue that PPB is quite successfully captures the moral intuition that Theory X is supposed to do.

is the alternate articulation of the intuition that Parfit sought to ground in logic. Nevertheless, I do not subscribe to her conception of rationality, wholly divorced from intuitions, emotions and subjectivity. Rationality hollowed from intuitions and emotions might be found in logic and mathematics, but when it's about values, morality, righteousness or ethics, intuitions and emotions increasingly play their part. For instance, can one ground the principle of not killing in game theory? Can it be logically deduced that stealing is wrong? In the movie *Avengers*, the character Thanos killed half of the living beings to stop resource depletion and balance the population driving the Universe to ruin. He firmly believed that if biological life can grow unchecked, eventually, the resources will run out, and everybody will face a painful and slow death.[57] Thanos sounds very rational and logical, but we would disagree with his conclusions. I argue that our disagreement with his decision comes from our having warm hearts and emotional well-being; logic untethered with intuition can lead to bizarre conclusions that might run orthogonal to human well-being. This is where I think Bennett's expectation that PPB be wholly divorced from intuition is mistaken. Reliance on intuition and feelings is conspicuous in morality and ethics. Perhaps, we are raising this expectation as the objection to PPB because the prenatal selection is not yet a Status Quo, and we are finding objections to justify our hesitance to accept this principle.

Second, on the other hand, we have thinkers who highlight the notion of the "satisficing option" to point out the discrepancy in PPB's logic.[58] For instance, in *The Case Against The Case For Procreative Beneficence,* Alan Holland highlights that one can never have reason to settle for what is merely good enough, also referred to as the "satisficing option." This view is subjected to

[57] See https://www.comicbasics.com/why-did-thanos-kill-half-the-universe-in-avengers-infinity-war/#:~:text=Thanos%20killed%20half%20of%20the%20Universe%20to%20stop%20resource%20depletion,a%20painful%20and%20slow%20death.

[58] See Holland, 2016.

various objections, but Savulescu and Kahane argue that it is a version of maximizing consequentialism. They argue that the only reason for halting the maximization process is when the opportunity costs exceed the benefits. The authors describe the satisficing view as aiming for a "good enough" life even when one has the potential to have a better life; they argue that the satisficing view provides no moral reason for choosing a better life over a good enough life, which they deem nonsensical.[59]

Nevertheless, this critique explores why anyone would want more than enough and maintains that there is no reason to ask for more after having enough; the belief that we can never have enough of a good thing is only based on countervailing reasons or cost-efficiency. For instance, the satisficer could argue that the notion of wellbeing itself is a satisficing notion and that the pursuit of better-being or best-being, as distinct from wellbeing, looks more like a pathological condition from a satisficing perspective. The critique deems it inherently irrational to turn down a free offer or something that is costlessly available.

I want to explore the example of striving for well-being rather than best-being to dig deeper into the logic of satisficing. I argue that there is no reason for not pursuing best-being if no costs are associated with this pursuit. Who wouldn't want to be stronger, faster, and live longer disease free? Especially when there are no negative costs associated with it; choosing well-being, good enough or satisficing option seems not only irrational but also a symptom of mediocrity. Choosing well-being instead of best-being looks like a pathological condition. That is why I agree with Kahane and Savulescu and contend that choosing a better life or a good enough one is only rational and common sense. I feel that we seem to subject PPB to this hyper-intensive conceptual and

[59] See Savulescu and Kahane. 2009.

logical hair-splitting primarily because the prospect of choosing an embryo makes us uncomfortable because embryo selection is not the Status Quo; otherwise, we don't seem to impose satisficing-maximizing dichotomy on other areas of life, provided maximizing has no costs. For instance, almost everyone wants to be infinitely famous, rich and healthy, provided they are subject to the pain and agonies of people who share these qualities. This motivates me to subject this critique to Reversal Test in Chapter Four.

4th Critique: Pursuing PPB is Vain.

Now let us discuss the critique that makes the case that pursuing PPB is in vain. This argument takes the following two forms.

First, this version assumes that pursuing the 'best possible life' is wrongheaded from the very start. Authors from this camp include Michael Parker, Erik Parens and Adrienne Asch.[60] For instance, in *The best possible child*, Parker argues that pursuing the 'best possible life' is self-defeating, leading to dissatisfaction and difficulty forming stable relationships. For example, a couple may undergo expensive and aggressive gene editing procedures to produce the "perfect" child with traits such as high intelligence, athleticism, and physical beauty; nevertheless, as the child grows up, the parents may become overly critical and demanding, causing strain in their relationship. The child may feel immense pressure to constantly live up to their parent's expectations and feel like they can never live up to their "ideal" standards, leading to feelings of inadequacy and dissatisfaction. It can cause difficulties in forming a healthy, loving relationship between the parent and child.

[60] See Parker 2007 and Parens and Asch, 2003.

I agree with this critique that increased parental investment might make parents overly critical and demanding. But the same can be said about parents paying for expensive private schools, college tuition, etc. I wonder what position this critique might hold in other contexts. I wonder why the critique suddenly remembers the correlation between parental investment and expectations when pursuing the best possible child but is silent on other contexts, such as parents paying for expensive private schools and college tuition. I strongly believe that it is a symptom of close-mindedness towards new principles and technologies; the only reason people find faults with this principle is that selecting embryos is yet to become a status quo.

This critique also maintains that the idea of the 'best possible child' is inherently contradictory as the ideal life is not always one of perfection, free from flaws and difficulties. For instance, a person with a disability who overcomes challenges and finds fulfillment in their life despite their limitations is a testament to the idea that having flaws or difficulties can make life meaningful. This individual's struggles and triumphs contribute to their character, giving their life a unique purpose and depth that contradicts the notion of the 'best possible life' as one without any flaws or hardships.

I firmly believe life is already too difficult; if we are too consciously planning everything good in life still, tragic things will happen to us; there is much entropy; we don't need to make room for struggles and challenges explicitly. I am sure that no one would come forward with this critique in other contexts, such as a serious accident, the death of a loved one or a chronic disease. I aver that the skepticism towards this principle is primarily a manifestation of our fear of the unknown and treading into unchartered territory, i.e., prenatal selection. This motivates me to subject this critique to Reversal Test.

The second version of the critique maintains that PPB's pursuit is vain because PPB's pursuit of the best is overly individualistic, discounts the social context and does not consider that interpretations of the good life and PPB's obligations vary between different contexts.[61] For instance, pursuing the best for their child might lead parents to choose an embryo with traits that parents think are best but nevertheless disconnected from social context and alienates their child from their peers; PPB's pursuit of the best has the potential of negatively impacting a child's wellbeing. For example, some parents might think six feet in height is a positive trait. Nevertheless, a child possessing this trait might feel alienated if they find themselves around children of short stature. That is why thinkers from this camp maintain that PPB's pursuit is in vain.

I do not think PPB's pursuit of the best possible child is in vain. Nevertheless, the perception of what constitutes best might be problematic; the problem is with the perception of principle, not the principle itself. In the above example, where a tall child feels alienated among children of short stature, the parent's misconception is that six feet height is a trait constituting a good life. The parents missed factoring that in a population area where the average is 5 feet, a person with a 6 feet height is likely to face some difficulties and diminish their chances of living a good life to some extent. Even the most individualistic pursuit of the best has to account for social context because a good life or well-being requires social interaction. Though it seems contradictory, self-centrism and selfishness have to consider other people.

Additionally, we don't raise this objection when someone chooses how they clothe, what car they drive, or whom they marry; the critique's logic is inconsistent. Either they object to a

[61] See Parker, 2007.

choice in clothing, marrying, etc., or they should be okay with choosing the ‘best’ embryo; if not, I suspect their reluctance to prenatal selection is a symptom of the fear of new and change.

In this chapter, I laid out several critiques of PPB and explored their fit to be subjected to the Reversal test. In the following chapter, I will introduce and explain Bostrom's RT in detail and will later apply RT to these critiques that I laid out in this chapter.

Chapter 3: The Reversal Test.

I will accomplish the following two objectives in this paper. First, I will explain the Reversal Test (RT) and its application to check for Status Quo Bias in our ethical judgements.[62] Second, I will explore RT's numerous potential objections and address them.

Let us first understand the significance of this topic. The development of technology is exponential. The dispersion and implementation of new technologies have catalyzed unforeseen ethical consequences. For instance, no one could have predicted the internet's evolutionary trajectory, pervasiveness in daily life, and myriad ethical implications.[63] The same could be said for automobiles and their ramifications.[64]

We are inept in predicting and evaluating new technologies' ethical implications because of the insufficient data for these unprecedented situations. Consequently, human subjects often devolve into subjective and intuitive inferences, suffering from various biases, including status quo bias, recency bias, conformity bias, and confirmation bias. For example, one often succumbs to a popular opinion to purchase a new mobile phone if one lacks technical expertise. Inevitably, one acquiesces to various biases, not merely one's own but others'. A brief literature review quickly draws attention to the pandemic of biases in medicine and bioethics.[65] For instance, the Status Quo Bias might often manifest as a reason for hesitating to employ gene therapy and not undergoing alternative therapies because of the subject's overemphasis on the potentially harmful side effects,

[62] From here onwards, I will refer to the Reversal Test by RT.
[63] I refer to consequences such as breach of privacy, hate speech, further weaponizing the advertising industry, et cetera.
[64] Here, I refer to environmental damage caused by automobile and Petro-chemical industries.
[65] See Albisser, 2011.

et cetera. I will now explain how RT exposes the status quo bias. But let us first understand what is meant by Status Quo Bias.

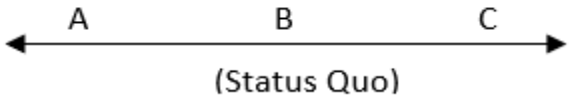
Status quo bias can be understood as an agent's irrational attachment to a given option due to its correlation with widely held preferences.[66] To better understand this bias, consider two identical but differently presented coverage models which may be offered to an agent seeking insurance: one in which the agent has to choose from either expensive insurance that provides broader coverage or cheaper insurance that offers less coverage but is designated as the default, and another coverage model in which the agent has to choose from either expensive insurance providing broader coverage, designated as default, or cheaper insurance with less coverage. Presented with the first model, most people will opt for cheaper insurance; presented with the second, however, most will select the more expensive insurance simply because it has been designated as a 'default' option.[67] Rather than engaging in some form of rational evaluation of their economic situation, most people behave irrationally due to the status quo bias. Unfortunately, the bioethics field also falls prey to this bias. A widespread antipathy towards life extension, moral attachment to the presently 'natural' lifespan, overemphasis on the potential risks of cognitive enhancement to justify the current cognitive ability, and a general aversion to the new biomedical technologies (including vaccines, GMOs and gene drives) are all the numerous heads of the hydra of Status Quo Bias.[68]

Zeckhauser & Samuelson argue that this bias is the lovechild of two non-rational cognitive processes: Loss Aversion and Endowment Effect.[69] Loss aversion theory states that most agents

[66] See Zeckhauser's & Samuelson's *Status Quo Bias in Decision-Making*, 1988.
[67] See Kahneman et al, 1991.
[68] See Bostrom & Ord, 2006. Also, I am referring to the sea monster Hydra of Lerna of Greek and Roman Mythology that had multiple heads.
[69] See Zeckhauser's & Samuelson's *Status Quo Bias in Decision-Making*, 1988.

seek to avoid losses more frequently than attain rewards.[70] An example would be a tendency to sell a stock at a lower profit margin than waiting for a higher profit. Likewise, Endowment Effect is a tendency to hold on to and overvalue an object one possesses than trade the object for better alternatives.[71] These proclivities culminate in a heightened emphasis on the disadvantages of the Status Quo's alternatives over their advantages.

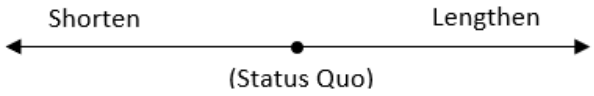
At this point, I introduce the Reversal Test devised by Bostrom & Ord to expose the Status Quo Bias in our ethical judgements.[72] Consider the Status Quo as Point B. If one objects to changing a parameter in a proposed direction A (provided there are no negative consequences), this suggests that the objector changes the parameter towards the opposite direction C.[73]



Should the objector still object to changing the parameter towards the opposite direction C, then it is the objector's burden to explain why changing the parameter in the proposed direction A is not an improvement over sticking to the status quo (Point B), provided there are no negative consequences in changing the parameter in either direction. If the objector fails to provide a satisfactory rational explanation, then the objector suffers from a Status Quo Bias. It is implausible that in the broad range of values of the parameter, the current set of values of the status quo happens to be the most optimal. Let us understand through an example.

[70] See Kahneman's and Tversky's *Prospect Theory: An Analysis of Decision under Risk*, 1979.
[71] See Beggan's *On the social nature of non-social perception*, 1992.
[72] See Bostrom & Ord, 2006.
[73] "provided there are no negative consequences"- The efficacy of Reversal Test in diagnosing the Status Quo Bias rests on this clause to a great extent.

Suppose we had access to technology which allowed for the safe manipulation of an agent's height and, accordingly, people became interested in increasing their height. However, a bioethicist condemns this practice by deeming it unethical. Here we apply RT where the parameter is height.



We suggest to the bioethicist (as a thought experiment) to change the parameter (height) in the opposite direction and ask whether it would be ethical to use the same technology to shorten (let us assume doing it is safe for the sake of discussion) one's height from the status quo. If the bioethicist still objects to shortening one's height while failing to explain why increasing as well as decreasing one's height is unethical, then the bioethicist suffers from a Status Quo Bias. It seems implausible that the current average human height is the apex of perfection and most optimal. Also, if one favours a height of 6 ft (Status quo: let's say) over 5 ft, one should also prefer a height of 7 ft to keep one's logic consistent, provided that increasing height has no foreseen negative consequences, it is unlikely that the status quo height of 6 ft is the local optima. However, if one disapproves of a height of 7 ft, one should also be okay with reducing the height from 6 ft to 5 ft. If one only favours a height of 6 ft (status quo) but opposes increasing and decreasing the height to 7 ft and 5 ft, respectively, while failing to provide a rational justification, the objector suffers from a Status Quo Bias.

Likewise, many conservative bioethicists exhibit this deeply ingrained status quo bias across numerous parameters, including intelligence, lifespan, and athletic performance, even when they fail to point out potential negative consequences of changing the parameter. They fail to

satisfactorily explain why the current capacities of the 'natural' human agent in the present day represent the apex of perfection.[74] Bostrom & Ord initially devised the RT for human cognitive enhancement as a parameter. Owing to the RT's efficacy in exposing the Status Quo Bias, I advocate employing it to detect this bias for various parameters (intelligence, lifespan, athletic performance, et cetera) in the broader field of applied ethics.

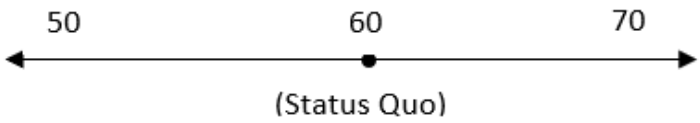
Nevertheless, it is worth noting that substantial grounds for seeking to preserve a state of affairs may exist in particular cases. For instance, one could argue that it would not be wise to engineer a bigger heart as the ratio between the heart and the body size is already optimal; otherwise, this heart and body size ratio would not have been naturally selected. In a similar vein, I anticipate RT's five potential objections.

(1) RT constitutes an implicit premise that changing the parameter is safe. This premise may not always be true. For instance, the standard procedures to increase height, namely growth hormone therapy and surgery, have potentially harmful side effects.[75] The harmful side effects may justify maintaining the status quo and not changing the parameter in either direction, regardless of the potential benefit of attaining an "ideal." Assuming the absence of potentially harmful side effects is a giant leap of sense, especially in the context of unprecedented technologies. The absence of potential harm provides the ground to undermine RT by rejecting its questionable premise. Nevertheless, I contend that RT still retains its force for the following four reasons.

[74] They often cite reasons such as Nature is already optimized, we shouldn't play the god, et cetera. In other cases, they defer to other reasons; for instance, life is a mixture of good and bad (See Parker, 2007).
[75] See https://www.dryukselyurttas.com/post/limb-lengthening-side-effects-complications-and-risks.

(a) If changing the parameter (height, IQ, et cetera) has potential harm, I propose evaluating those harms alongside the costs of inaction, that is, sticking to the status quo and not changing the parameter in the proposed direction. For instance, one might highlight the potentially harmful side effects of enhancing human cognition. Nevertheless, I offer the counterargument that more severe issues may arise due to not enhancing human cognition: examples include failure to solve climate catastrophe, overconsumption, poverty, political conflicts, et cetera. This counterargument undermines the critic's attack on RT's questionable premise (assuming one can change the parameter safely) by demonstrating that there can be far more dire costs in not changing the parameter.

(b) Changing the parameter in the proposed direction is not always about incurring new costs but removing existing hazards. Eliminating common risk factors that shorten the human life span, such as red meat consumption or smoking, may increase life expectancy without genetic intervention. Suppose the bioethicist still opposes extending life in the manner mentioned above and simultaneously objects to shortening the lifespan by boycotting so-called artificial methods such as vaccines and antibiotics: in such a case, the onus ought to be placed on the objector to explain why lengthening or shortening the life span is undesirable. It is because if one favours a life span of 60 (status quo) over 50, one should also favour a lifespan of 70.[76] It is unlikely that the life span of 60 (status quo) is the most optimal.



[76] For discussion's sake, let consider a lifespan of 60 as the status quo. However, the current average lifespan in US is 77. See https://www.cdc.gov/nchs/fastats/life-expectancy.htm, 2022.

However, if one disapproves of a lifespan of 70, one should also be okay with reducing the lifespan from 60 to 50. If one only favours a life span of 60 (status quo) but opposes increasing and decreasing the life span to 70 and 50, respectively, while failing to provide a rational justification, the objector suffers from a status quo bias. Unfortunately, some ethicists still oppose life extension, even if done safely.[77] The above argument blocks the critic's attempt to undermine the RT by strengthening its working premise that one can change the parameter safely.

(c) Changing the parameter does not affect the non-existent agents of futurity. Some ethicists argue, for instance, that an embryo's enhanced IQ may negatively affect its future welfare due to an increased likelihood of experiencing harmful effects, including existential despair and social maladjustment.[78] However, I argue that changing the parameter and expanding the population of high-IQ individuals does not cause harm if future individuals value life over death despite the potential suffering that may arise from a higher IQ. It is because those individuals find a positive value in life, making life or existence worth more than not living or not existing. One increases the total good by causing high-IQ individuals to exist as long as they value life over death despite the potential suffering due to higher IQ.

Moreover, a high IQ individual cannot necessarily evaluate that one would have been happier smarter or less intelligent than one being born with a lower IQ because the high IQ makes the individual that particular 'individual.' Suppose the high IQ individual was able to reduce their IQ: that individual will be different from the pre-decreased IQ individual. To explain this point better, I allude to Savulescu's *Procreative Beneficence: Why We Should Select The Best Children,*

[77] See Pijnenburg's and Leget's *Who wants to live forever? Three arguments against extending the human lifespan,* 2007.
[78] See Darby, 2010.

where he invokes the nuclear accident example cited in Parfit's *Reasons and Persons.*[79-80] In that hypothetical scenario, a government facing a power shortage takes desperate measures by operating an unsafe nuclear power plant. This measure solves the energy crisis temporarily. However, an accident soon follows at the power plant, causing children to be born with genetic diseases. Parfit argues that there is no harm to the children because they would not have existed without nuclear power, as it drastically changed people's lifestyles: it is because people slept at different times, got employed, increased social interaction, et cetera. As a result, children were born at different points in time. Children would still be born in the pre-nuclear power town but different from those born during nuclear power. In this light, the powerplant did good by causing those children to exist, provided they prefer life over death owing to the potential suffering caused by congenital disabilities. Therefore, I argue that the costs of changing a parameter in a desirable direction do not harm future persons. The above argument diminishes the critic's attack on RT's premise that one can safely change the parameter by demonstrating that when it comes to future persons, the costs of changing parameters do not harm anyone.

(d) Lastly, to justify RT's force, I invoke the argument against screening out disability to highlight the bias against moving the parameter towards enhancement. Typically, a conservative bioethicist might argue that allowing an embryo to be born with a disability does not harm, provided the future individual prefers life over death owing to congenital disabilities.[81] On the other hand, bioethicists criticize selecting an embryo predisposed to a higher IQ because a higher IQ might potentially harm the individual.[82] Applying RT, I object to the notion that choosing an

[79] See Savulescu, 2001.
[80] See Parfit, 1984.
[81] See Parens & Asch, 2003.
[82] See Parker, 2007.

embryo with a disability does not harm a potential individual, but choosing an embryo with a higher IQ does. We ought to demand consistency from the objectors. If the critic cites potential costs as a reason not to change the parameter, then why is incurring costs by allowing embryos with a disability to be born okay but incurring costs for enhancements ethically problematic?

The above argument renders the critic's objection to RT's premise (that one can safely change a parameter) superfluous by pointing out the critic's inconsistent behaviour that approves of incurring costs by allowing embryos with a disability to be born but disapproves of bearing the costs of changing the parameter to the proposed direction and strengthens the case for RT.

(2) The second of the five RT's objections is the claim that millions of years of natural selection have already optimized the status quo parameters: hence, one should not change them. One can highlight the optimal ratio of the heart and body size discussed earlier to support the claim that evolution would have selected against any unfit ratio. The status quo defenders tend to use the same argument for numerous parameters of bioethics.[83] For instance, they justify current IQ levels by claiming that if a higher IQ were desirable, evolution would have already bestowed it. However, these critics ignore four significant flaws in their justification.

(a) The human subject's living environment has drastically changed. We no longer live as hunter-gatherers in the grasslands of the Kalahari Desert.[84] Our phenotype and genotype might have been a good fit for surviving in that environment, but they may not be advantageous in an industrialized setting. Our nails, hair, and other vestigial traits are no longer relevant today. Our skull sizes are no more constrained by natural delivery as we now have other possibilities,

[83] Here, I am referring to philosophers such as Micheal Parker and Michael Sandel.
[84] The origin of Homo Sapiens can be traced back to the grasslands and deserts of central Africa. See https://www.nationalgeographic.com/science/article/controversial-study-pinpoints-birthplace-modern-humans

including Caesarean section delivery. Metabolic demands that constrain high energy-consuming computational tasks no longer exist. These examples demonstrate that the current parameters endowed to us by evolution are not necessarily optimized, as the status quo advocates like to think.

(b) Evolution does not 'intentionally' or strategically choose adaptive traits to make us fit for the environment: natural selection primarily relies on blind random genetic mutations; hence, it is a sub-optimal solution to equip our species for survival. We no longer live in food-scarce pre-historic times where a sweet tooth is an adaptive trait, compelling us to look for sugary fruits as an energy source. We live in an age where overeating is one of the leading causes of preventable death.[85] Today having a sweet tooth is a severe disadvantage. A genetic mutation corresponding to a lack of sugar cravings is yet to propagate in the human gene pool. Even if we had that mutation, it is not clear that we want to filter individuals based on specific taste buds than choosing sophisticated traits, including intelligence, conscientiousness and rationality. We can now guide the evolution toward human welfare by employing technologies and human intentions than relying on slow-acting natural selection based on random mutation. Traits like the heart-body size ratio might have been decently optimized, but we still possess many traits yet to be optimized.

(c) Evolution is indifferent to ethics, morality, and individual and social welfare. Violence, killing and stealing might be advantageous from an evolutionary viewpoint, but we may not want to be advantageous in that manner.[86] The evolutionary processes are inept at optimizing the parameters of ethics and individual and social welfare, undermining the position that evolution is optimal.

[85] See WHO's statistics on Obesity at https://www.who.int/news-room/facts-in-pictures/detail/6-facts-on-obesity
[86] That explains to our affinity the moralizing and civilizing forces such as religions.

(d) I highlight the widespread bias against anthropic undertakings. This bias often manifests in implicit beliefs such as, 'The world was perfect until the humans came,' 'The world would be a better place without humans,'[87] 'Those hills looked perfect, the buildings spoiled the view,' and so on.[88] These beliefs reveal an unhealthy cynicism against anything human: it deems activities of other organisms natural and, therefore, good but unfairly positions all human activities as unnatural.[89] Critics of this camp might view beaver dams are natural but buildings as unnatural. Perhaps this bias's roots date back to ancient life-denying religions and philosophies.[90] For example, we must ask the critics of this camp if they also view the epidemics of plague, cholera, and syphilis as manifestations of nature's harmony owing to ancient evolutionary processes. Would these critics also approve boycotting 'artificial' human interventions, including polio vaccines, surgeries and hospitals?

(3) The third of the five RT's objections is that there will always be transition costs which arise from changing the parameter in a proposed direction: even after establishing the benefits of suspending the status quo and changing the parameter in the proposed direction, there still might be substantial costs in implementing the proposed transition, making the change not worth it. For instance, critics of this camp might argue that realizing the need to replace the highly fuel-consuming vehicle with a fuel-efficient one is not enough when the cost of replacing the vehicle is self-defeating. Nevertheless, one should always attempt to compare the transition costs of changing the parameter in the desired direction to the cost of not changing the parameter. Bringing intelligent children into existence might have costs, such as possible parent-child friction due to

[87] See https://www.latimes.com/socal/burbank-leader/opinion/tn-blr-me-intheory-20190204-story.html
[88] See https://disruptr.deakin.edu.au/environment/8579/
[89] See Everett et al., 2019.
[90] See Salter, 2022.

disparate cognitive abilities, revision of the school syllabi to match the higher IQ, and redesigning recreational activities. However, not aiming for intelligent children also presents numerous problems, such as the inability to resolve the climate crisis, global poverty, and political dissent. The above argument makes a case for employing RT to expose the Status Quo Bias and take appropriate action despite potential transition costs.

(4) The fourth of the five RT's objections is that any action is good or bad only if it affects an existing person according to the person-affecting view.[91] In other words, one could argue that changing the parameter in the desired direction will not do any good unless it affects a living person. For instance, creating high-IQ children would not be good because it does not affect existing persons for two reasons. First, it will not affect any existing person unless we have technologies that can increase IQ after birth. Second, creating high-IQ children would not even affect the children themselves because they would not know what it is like to be a low-IQ person, as discussed earlier in the nuclear accident example.

On the contrary, I argue that creating new high-IQ children would affect adults because higher-IQ children will potentially improve the world by inventing new and effective treatments for diseases and old age. Even if bringing high-IQ children into existence does not affect the children themselves (as they cannot imagine themselves being born with a lower IQ), this does not provide us with a rationale for decreasing the intelligence or keeping it at the same level. To support my claim, I invoke Parfit's example of the nuclear accident, where one can argue that the nuclear accident did no wrong to children born with genetic diseases as those children would not have existed without the nuclear power plant. However, I agree with Savulescu that we must

[91] See Arrhenius, 2003.

articulate our ethical intuition that children born with genetic diseases (in Parfit's example) ought to be prevented by appealing to harmless wrongdoing. Similarly, I argue that there is harmless wrongdoing in not changing the parameter--in this case, not increasing the IQ--even though it does not affect any existing person—for instance, the inability to resolve the climate crisis, global poverty, and political dissent. The above position establishes that one should apply RT and change parameters accordingly, even if the change does not affect any current living person.

(5) The last of the five RT's objections is that the RT applies only to the consequentialist objections to technologies, not considering other ethical accounts such as deontology and virtue ethics. RT only considers the consequences of changing the parameter. It does not consider the intention, duty or obligation in changing the parameter. Consequently, one could argue that RT does not broadly capture our moral intuitions. However, I claim that RT has applications in various ethical contexts. Instead of focusing on the consequences of abiding by or rejecting the status quo, we can apply RT to check our drives and intentions and consider a more comprehensive array of moral considerations. For instance, if one advocates the status quo IQ because one feels one should not compete with God's omniscience, we can apply RT and ask if the critic would approve of decreasing the IQ because it better ensures God's omniscience. We can use RT for various intentions without any reference to consequences. We can employ RT not only to evaluate consequences but also to check for contentious virtues and deontological imperatives.

To recapitulate: first, I explained the significance of this topic; second, I explicated the status quo bias and introduced RT; third, I laid out RT's potential objections and resolutions; fourth, to further assuage any lingering objections, I presented DRT. In light of the above exposition, the paper effectively demonstrated RT's utility in revealing the status quo bias in our ethical judgements. This suggests that RT and DRT may be useful in evaluating our judgements.

Chapter 4: Reversal Test applied to the critiques.

I explicated Bostrom's RT and anticipated potential objections in the previous chapter. I demonstrated that in many cases, the hesitation to adapt to new technologies and principles is due to the affinity to the Status Quo Bias. In this chapter, I will apply RT of PPB's critiques discussed in Chapter Two to check whether those critiques are legitimate or suffer from the SQB.[92] To do that effectively, I will briefly revisit PPB's critiques discussed in the second chapter and then apply RT to establish the critiques' persuasiveness. In my analysis by applying RT to PPB's critiques, I highlight that the skepticism toward PPB captured by these four critiques primarily manifests SQB.[93]

To revise, I laid out the PPB by Savulescu in the first chapter. According to this principle, "couples (or single reproducers) should select the child of the possible children they could have, who is expected to have the best life, or at least as good a life as the others, based on the relevant, available information."[94] Before applying RT, I will briefly touch upon the critiques to facilitate the discussions.

The first critique, the Disability Rights critique, argues that prenatal testing for disabilities can lead to discrimination against people with disabilities by implying that their lives are of lesser value and reducing the number of people with disabilities.[95] The second most common critique of PPB is that it is indeterminate and cannot be applied in a real-world context. This argument takes two forms: the first argues that ranking possible lives based on genetic testing is not

[92] Note that RT=Reversal Test and PPB=Principle of Procreative Beneficence.
[93] It is worth mentioning that I chose those specific techniques because those were some of widespread objections to the PPB.
[94] See Savulescu, 2001.
[95] See Parens and Asch, 2003.

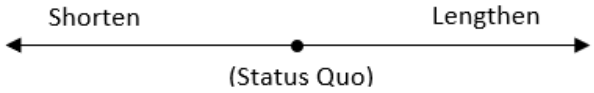
straightforward, as the concept of what constitutes a good life is complex and cannot be reduced to a set of simple genes or traits.[96] The second argument holds that PPB is not a requirement, as Savulescu has not effectively demonstrated the distinction between moral reasons and moral obligations.[97] The third critique of PPB can be bifurcated into two arguments. The first argument maintains that PPB relies too heavily on intuition and lacks a logical foundation, particularly in its response to the Non-Identity Problem.[98] The second argument challenges the maximization view of consequentialism and raises questions about the value of seeking more than enough and the implications of this pursuit on our moral and ethical beliefs.[99] The fourth and last argument against pursuing PPB takes two forms. First, pursuing the "best possible life" is self-defeating that can lead to dissatisfaction and difficulties in forming stable relationships.[100] Secondly, critics argue that PPB's pursuit of the best is overly individualistic, discounts social context, and does not consider that interpretations of the good life and PPB's obligations vary between different contexts.

After briefly revisiting PPB's critique, I will now briefly revisit Bostrom's and Ord's RT. As we discussed earlier, Status Quo Bias refers to the irrational preference for preserving the current state of things, leading to decision-making not in line with economic rationality. This bias combines two non-rational cognitive processes: loss aversion and the endowment effect.[101] Loss aversion refers to a preference for avoiding losses over gains, while the endowment effect refers to the tendency to overvalue an object one owns.[102] The SQB can be observed in the field of bioethics, where there is resistance to new biomedical technologies and a preference for preserving

[96] See Parker, 2007.
[97] See Saunders, 2015.
[98] See Bennett, 2009.
[99] See Holland, 2006.
[100] See Parker, 2007.
[101] See Bostrom, 2006.
[102] See Gunaydin, 2018.

the current state of things.[103] The RT can expose the status quo bias in ethical judgements. The test invites the person who objects to a change to consider the opposite change and explain why the original change is not an improvement over the status quo, provided there are no tangible potential negative consequences. If the person cannot provide a satisfactory explanation, it indicates SQB. Let us understand through an example.

Suppose we had access to technology which allowed for the safe manipulation of an agent's height and, accordingly, people became interested in increasing their height. However, a bioethicist condemns this practice by deeming it unethical. Here we apply RT where the parameter is height.



We suggest to the bioethicist (as a thought experiment) to change the parameter (height) in the opposite direction and ask whether it would be ethical to use the same technology to shorten (let us assume doing it is safe for the sake of discussion) one's height from the status quo. If the bioethicist still objects to shortening one's height while failing to explain why increasing as well as decreasing one's height is unethical, then the bioethicist suffers from a Status Quo Bias. It is because it seems implausible that the current average human height is the apex of perfection and most optimal. Also, if one favours a height of 6 ft (Status quo: let's say) over 5 ft, one should also prefer a height of 7 ft to keep one's logic consistent, provided that increasing height has no foreseen negative consequences, it is unlikely that the status quo height of 6 ft is the local optima. However, if one disapproves of a height of 7 ft, one should also be okay with reducing the height from 6 ft

[103] See Hofmann, 2020.

to 5 ft. If one only favours a height of 6 ft (status quo) but opposes increasing and decreasing the height to 7 ft and 5 ft, respectively, while failing to provide a rational justification, the objector suffers from a Status Quo Bias. The RT has effectively exposed the status quo bias in various parameters, including height, intelligence, lifespan, and athletic performance, among others, and should be employed more broadly in applied ethics.

Reversal Test on the 1st critique.

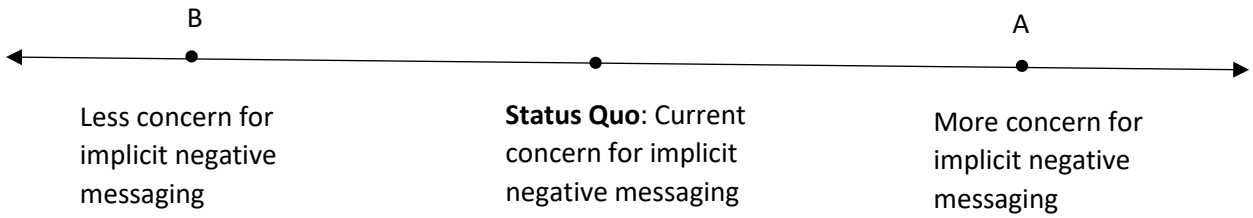
After laying out the conceptual background, I will apply RT to the PPB's four critiques discussed in Chapter Two.

The first critique, the Disability Rights critique, maintains that prenatal testing for disabilities (for instance, Down syndrome) results in discrimination against those with those disabilities both by making a statement about the worth of such lives and the reduction in the numbers of people with this condition. It is also called the Expressivist Objection.[104] For example, one could argue that employing IVF and PGD to screen out embryos with signs of congenital conditions such as Down syndrome or Cystic Fibrosis might signal an implicit message that the lives of people with Down Syndrome or Cystic Fibrosis are of a lesser value and that we should allow the number of people living with this condition to increase. The critique recommends that prenatal testing be accompanied by non-directive counselling and that policymakers and healthcare providers work to improve the quality of life for people with disabilities. Savulescu argues that "even if the Disability Discrimination Claim were true, it would be a drastic step in favour of equality to inflict a higher risk of having a child with a disability on a couple (who do not want a child with a disability)."[105] Savulescu maintains that it is important to distinguish between

[104] See Edwards, 2004.
[105] See Savulescu, 2001.

disability and persons with disability; prenatal selection reduces the former but is silent on the value.[106] He argues that selection does not necessarily imply that the lives of those who now live with a disability are less deserving of respect and are less valuable. He provides the example that to attempt to prevent accidents which cause paraplegia is not to say that people with paraplegia are less deserving of respect. However, I will assume that the expressivist objection is true to examine the reversal test.

Here, I identify the "concern for implicit negative messaging" towards people's disability as the parameter and apply the Reversal Test.



In this instance, the status quo is not using prenatal selection, as selecting the best embryo risks sending a negative implicit message to people with disability. On the right, point A denotes an increased concern for negative messaging toward people with disability. On the left, point B denotes a diminished concern for negative messaging toward people with disability. The actions might entail using prenatal selection and disclosing all information concerning the genetic conditions of the embryo to potential parents.

PPB seems to suggest moving the parameter towards point B (less concern about negative messaging) by advocating prenatal selection, and the expressivist argument objects to moving the parameter in this direction. It is an important goal to avoid negative messaging. Applying the

[106] See Savulescu, 2001.

Reversal Test, we would consider moving the parameter toward point A (more concern about negative messaging). If we find this move problematic, we should consider whether changing the parameter in either seems problematic. Other things being equal, we should question why the current concern about negative messaging is the local optima. If one cannot justify adherence to the Status Quo, there is a high chance that one suffers from the Status Quo Bias, and the onus is on them to clarify their stickiness. It is worth mentioning that for the Reversal Test to work properly, we should ensure that there are no other negative consequences associated with changing the parameter except the parameter in question.

Lastly, we should also factor in the harm of not moving the parameter towards point B (less concern about negative messaging), i.e., discouraging prenatal selection, open discussion about genetic conditions that might lead to disability, emotional costs, etc. Have we done sufficient calculus that establishes that the societal cost of negative messaging toward people with disability is more than the cost of moving the parameter towards point B (less concern about negative messaging)? If not, our affinity to the Status Quo is not well justified.

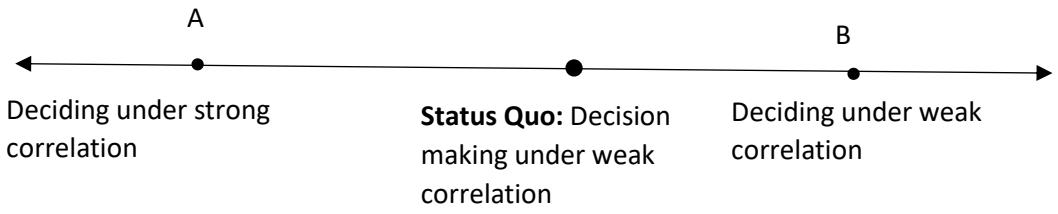
Reversal Test on the 2nd critique.

The second most common critique of PPB is that it is indeterminate and cannot be applied in a real-world context. This argument takes two forms: the first argues that ranking possible lives based on genetic testing is not straightforward, as the concept of what constitutes a good life is complex and cannot be reduced to a set of simple genes or traits. The second argument holds that PPB is not a requirement, as Savulescu has not effectively demonstrated the distinction between moral reasons and moral obligations. The concept of supererogation adds a nuanced perspective to the debate, allowing for a more thorough understanding of what is considered morally

commendable versus what is required. Saunders' critique of Savulescu's argument for PPB underscores the need for a more nuanced and flexible approach to moral reasoning.

Let us apply the Reversal Test to the 1st argument of the 2nd critique "The ranking of possible lives based on genetic testing is not straightforward, as the concept of what constitutes a good life is complex and cannot be reduced to a set of simple genes or traits." The logic is that we cannot and should not make a reproductive decision because there is a questionable (and allegedly) correlation between what constitutes a good life or well-being and a set of simple genes or traits.

I identify the 'decision making' under weak correlation as the parameter. The Status Quo position is that we shouldn't decide because the link between the desired result and its contributing factor is ambiguous. For instance, in this case, we cannot and should not make a reproductive decision because there is a questionable (and alleged) correlation between what constitutes a good life or well-being and a set of simple genes or traits. PPB invites us to move the parameter toward point B, which entails making reproductive decisions based on genetic traits to maximize the chances of the offspring's well-being, even when the link between a good link and corresponding genetic traits is unclear.

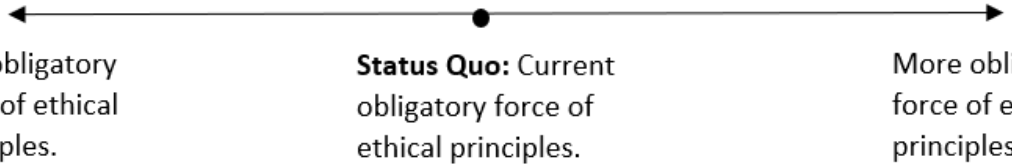


If we find this move problematic, we should consider moving the parameter towards A, which would entail making decisions only when there is a strong correlation between the desired result and its contributing factors. For instance, we have enough data that cardiovascular activity

significantly contributes to physical well-being;[107] therefore, it is reasonable to decide to exercise. But moving the parameter in this direction would also entail not making decisions until we ascertain a strong link between the desired outcome and its contributing factors. For instance, one could argue that voting, too, wouldn't make any sense because one would not be able to trace the link between one individual vote and the result of an election comprising of complex factors such as economics, donations to political parties, the success of a campaign, potential international and domestic interference. If we are reluctant to change the parameter in this direction, we should ask ourselves why we are not confident about making reproduction decisions. Why is making decisions in case of a weakly traced link between desired outcome and its contributing factor a dealbreaker in PPB and employing reproductive technologies such as PGD (assuming other things remain the same in changing the parameters)? Suppose we cannot specify why making reproductive decisions when the link between desired outcome and its contributing factors should be avoided other than the same reason (that making reproductive decisions when the link between desired outcome and its contributing factors should be avoided). In that case, we have strong reasons to think we suffer from Status Quo Bias.

Now I will apply the Reversal Test to the 2nd argument of this critique that "PPB is not a requirement, as Savulescu has not effectively demonstrated the distinction between moral reasons and moral obligations." As per thinkers from this camp, Savulescu assumes that morality requires us to do what we have the strongest moral reason to do, but these thinkers dispute this perspective. These thinkers maintain that many believe that while we have reasons to perform actions beyond what is morally expected, these actions are not required but considered morally commendable.

[107] See Nystoriak and Bhatnagar, 2018.



To apply the Reversal Test, I identify "obligatory force" as the parameter and envision moving the parameter to the 'right' direction (increased obligatory force of the principle). It would entail following and fulfilling the ethical principles more rigorously and comprehensively, for instance, considering anything less than the saintly behaviour of persons like Mother Teresa as subpar moral behaviour. Another example would be to expect people to take the ethical principle of not lying more diligently; if one is asked why they left the party early, one would have to speak the truth that they found the party boring. If we find moving the parameter in this direction problematic, we should consider moving the parameter to the 'left' direction. Moving the parameter in this direction entails decoupling ethical principles and their application, for instance, having more flexibility and degrees of freedom in applying the ethical principle of 'always speaking the truth.' We could reimagine Peter Singer's drowning child experiment in this context.[108] Moving the parameter in this direction would entail the passerby wearing expensive clothes is not expected to save the drowning child in the nearby pond; if the child dies, the passerby could claim that though saving the child would have been morally commendable, it would have been wrong to expect the passerby to save the drowning child out of obligation. Suppose we find moving in this direction uncomfortable. In that case, we have strong reasons to believe the need to distinguish between moral reasons and moral obligations, the introduction of the notion of supererogation, etc., are symptoms of our hesitancy towards the controversial principle of

[108] See Temkin, 2022.

Procreative Beneficence that uncomfortably challenges our Status Quo of non-intervened-natural-births.

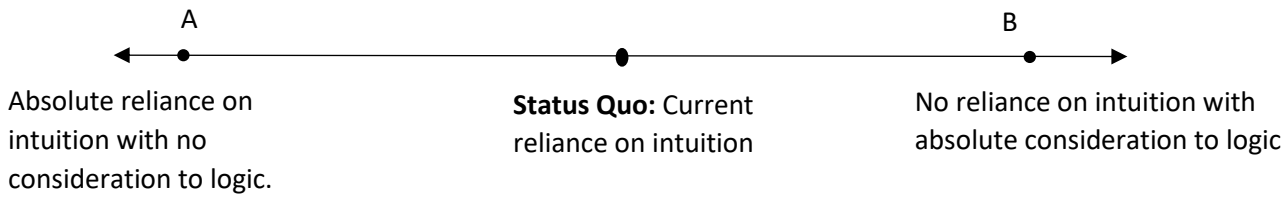
Additionally, I see no point in distinguishing between moral reasons and moral obligations because Savulescu does add that when conflicting moral reasons do not outweigh the obligation to have the most advantaged child, parents should choose the most advantaged child.[109] Savulescu does not require us to apply one principle maximally at the cost of other principles and one's well-being. For instance, Savluescu is not asking potential parents to enroll in expensive services such as IVF and PGD when they cannot afford it, or they can afford it by starving other family members or by stealing the money. Savulescu does give an opening where one could stop short of maximally applying the principle when it is difficult to realize. Therefore, I see the above critique's distinction between moral reasons and moral obligations as redundant. I don't see why one wouldn't act supererogatorily if there are no costs to actualize a moral principle maximally.

Reversal Test on the 3rd critique.

The third critique of PPB can be bifurcated into two arguments. The first argument maintains that PPB relies too heavily on intuition and lacks a logical foundation, particularly in its response to the Non-Identity Problem.[110] The second argument challenges the maximization view of consequentialism and raises questions about the value of seeking more than enough and the implications of this pursuit on our moral and ethical beliefs.[111] The argument maintains that PPB's logic is flawed because it fails to consider the concept of the "satisficing option."

[109] See Savulescu, 2001.
[110] See Bennett, 2009.
[111] See Holland, 2006.

I will start by applying the Reversal Test on the 1st argument of the 3rd critique: "PPB relies too heavily on intuition and lacks a logical foundation, particularly in its response to the Non-Identity Problem.[112]"



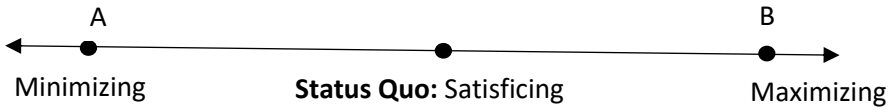
To apply the Reversal Test, I identify ethical principles' "reliance on intuition" as the parameter as the complaint that PPB relies too heavily on intuition and lacks a logical foundation is used as an objection against the principle. Now, I envision moving the parameter toward point A, where there is no reliance on intuition with absolute consideration to logic; the logic is untethered from intuitions and feelings. Moving the parameter in that direction could entail basing ethical principles solely on logic rather than intuition. Moving in this direction would entail that the character Thanos in the movie *Avengers*, as discussed earlier, was not wrong in killing half of the living beings to stop resource depletion and balance the population driving the Universe to ruin. His move sounds very rational and logical, but we would disagree with his conclusions.

If moving the parameter in this direction seems problematic, I envision moving the parameter to point A, where one absolutely bases the ethical principles on intuition rather than logic, where one does something completely opposite per the stipulated rational norms as long as the underlying intuition 'feels' right. An example could be basing ethics on emotions and feelings, not being consistent in applying ethics, or a mob aggressing toward an individual in the name of righteousness but with no elaborate rationale. If even this move seems problematic, we should evaluate why we have problems with PPB employing our intuition and not being absolutely

[112] See Bennett, 2009.

rational, but we do not object in other contexts where ethical principles do factor into human instincts; we should be consistent in applying the same logic in different contexts. If we cannot specify the negative consequences of being okay with PPB's reliance on intuition, we have strong reasons to think that we might be biased towards the status quo of not making reproduction decisions and raising the objection only in the context of reproductive decision-making.

Now I will apply the Reversal Test to 2nd argument of the 3rd critique. The second argument challenges the maximization view of consequentialism and raises questions about the value of seeking more than enough and the implications of this pursuit on our moral and ethical beliefs.[113] The argument maintains that PPB's logic is flawed because it fails to consider the concept of the "satisficing option." The critique challenges PPB's pursuit of the best embryo by highlighting that one could be satisfied with a good enough embryo.



To apply Reversal Test, I identify 'Satisficing' as the parameter. I apply the Reversal Test by moving toward point A of maximizing. Nevertheless, for Reversal Test to work, we have to assume no negative consequences in moving the parameter in either direction; in this case, there are no costs to the maximization process. Let us understand the move to point A through an example. Let us say one becomes satisfied after eating three slices of Pizza mediated by their appetite and stomach size. Advocates of 'maximizing' would argue that there is no reason to stop at 3 slices if the appetite and stomach size are not limiting and there are no other costs (health, economic, etc.) to eating more; one should maximize indefinitely as long as there are costs or penalties. If we find this change in parameter or maximizing option problematic, like the advocates

[113] See Holland, 2006.

of the critique, we should envision moving towards point B or minimizing direction. It would entail, for instance, stopping and being satisfied with 2 slices of pizza even though one could eat 3 slices with no negative costs. Another example would be not putting all the effort into getting an A+ on an assignment and settling for an A grade, even when one has the potential to make requisite efforts to get an A+. Similarly, in line with PPB, one is only rational to pursue the best child possible.

However, if the move toward minimizing still seems problematic, I think we should consider our affinity to 'satisficing,' especially when there are no costs in maximizing. If we still find PPB's maximizing problematic, we have strong reasons to conclude that our Status Quo Bias makes it problematic even when competing costs and principles exist.

Additionally, we should also consider the costs of not maximizing. For instance, not selecting an embryo with the potential for an above-average cognitive capacity also presents numerous problems, such as the inability to resolve the climate crisis, global poverty, and alarming political divide. We should remember that sticking to the status quo and not changing has costs. In the same vein, not applying PPB has costs too.

Further, PPB's pursuit of the best will not affect any existing person. To explain this point better, I allude to Savulescu's *Procreative Beneficence: Why We Should Select The Best Children,* where he invokes the nuclear accident example cited in Parfit's *Reasons and Persons.*[114]&[115] In that hypothetical scenario, a government facing a power shortage takes desperate measures by operating an unsafe nuclear power plant. This measure solves the energy crisis temporarily. However, an accident soon follows at the power plant, causing children to be born with genetic

[114] See Savulescu, 2001.
[115] See Parfit, 1984.

diseases. Parfit argues that there is no harm to the children because they would not have existed without nuclear power, as it drastically changed people's lifestyles: it is because people slept at different times, got employed, increased social interaction, et cetera. As a result, children were born at different points in time. Children would still be born in the pre-nuclear power town but different from those born during nuclear power. In this light, the powerplant did good by causing those children to exist, provided they prefer life over death owing to the potential suffering caused by congenital disabilities. Therefore, I argue that the costs of changing a parameter in a desirable direction do not harm future persons. The maximizing nature of PPB's pursuit for the best possible child is not harming anyone.

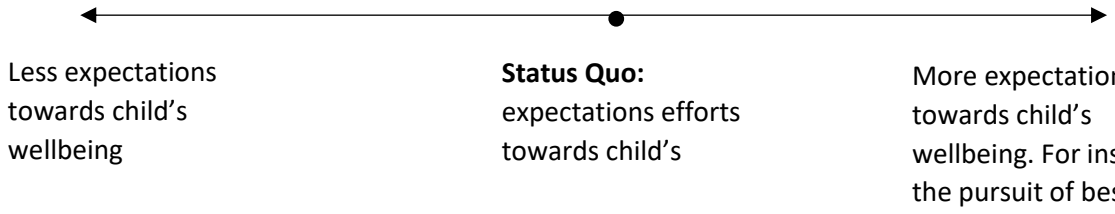
Reversal Test on the 4th critique.

The fourth and last argument against pursuing PPB takes two forms. First, pursuing the 'best possible life' is self-defeating that can lead to dissatisfaction and difficulties in forming stable relationships.[116] Secondly, critics argue that PPB's pursuit of the best is overly individualistic, discounts social context, and does not consider that interpretations of the good life and PPB's obligations vary between different contexts. These critics believe pursuing PPB's best is futile and can negatively impact a child's well-being.

I will now apply the Reversal Test to the 1st Argument of the 4th critique, which maintains that pursuing the 'best possible life' is self-defeating that can lead to dissatisfaction and difficulties in forming stable relationships. For example, a couple may undergo expensive and aggressive gene editing procedures to produce the "perfect" child with traits such as high intelligence, athleticism, and physical beauty. However, as the child grows up, the parents may become overly critical and

[116] See Parker, 2007.

demanding, causing strain in their relationship. The child may feel immense pressure to constantly live up to their parent's expectations and feel like they can never live up to their 'ideal' standards, leading to feelings of inadequacy and dissatisfaction. It can cause difficulties in forming a healthy, loving relationship between the parent and child.[117]



To apply the Reversal Test, I identify one's 'expectations' towards the child's well-being as the parameter. The current status quo is current expectations towards children conceived through the status quo natural birth. Moving the parameter in the 'right' direction would entail, for instance, expecting more concerning a child's traits, health, and aspects of wellbeing. The critique argues that, similarly, PPB's pursuit of the 'best possible life' is self-defeating because it can lead to dissatisfaction and difficulties in forming stable relationships.

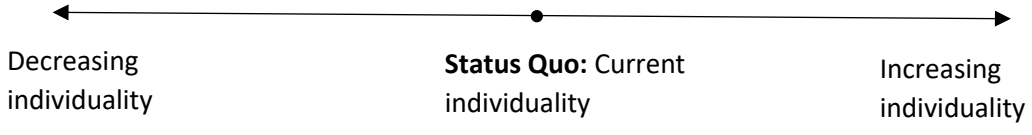
If we are uncomfortable with shifting the parameter towards the 'right' direction, then I would invite us to envision moving the parameter to the 'left' or moving towards the direction that entails having fewer expectations towards the child's wellbeing, for instance, being less concerned about the child's traits, health, and aspects of wellbeing; not being diligent in maintaining good habits for healthy childbirth; being too liberal concerning child's nutrition. Suppose we find moving the parameter even in this direction. In that case, we should question why we find having fewer expectations toward the child's well-being problematic when we object to PPB's pursuit of the 'best possible life' as self-defeating because the higher expectations can lead to dissatisfaction

[117] See Parker, 2007.

and difficulties in forming stable relationships. If we have a problem with PPB, we should have been okay with moving the parameter to the 'left' or moving towards the direction that entails having fewer expectations towards the child's wellbeing; we ought to be consistent with our logic. It seems that the only reason we find PPB problematic is that embryo selection is not the status quo; otherwise, other things being equal, there is no reason to think that the status quo of current expectations towards children conceived through the status quo natural birth is the most optimal solution or the local optima.

As I discussed previously, we should also consider the costs of not raising our expectations. The pursuit might be self-defeating, but not pursuing the best could be even more detrimental; what if not raising our expectations might prevent our offspring or the future generation from reaching their maximum potential or becoming model world citizens? We should remember that sticking to the status quo and not changing has costs. In the same vein, not applying PPB has costs too.

Now, I will apply the Reversal Test to the 2nd Argument of the 4th critique, which maintains that PPB's pursuit of the best is overly individualistic and discounts social context. For instance, pursuing the best for their child might lead parents to choose an embryo with traits that parents think are best but nevertheless disconnected from social context and alienates their child from their peers; PPB's pursuit of the best has the potential of negatively impacting a child's wellbeing. For example, some parents might think six feet in height is a positive trait. Nevertheless, a child possessing this trait might feel alienated if they find themselves around children of short stature. That is why thinkers of this camp maintain that PPB's pursuit is in vain.



To apply the Reversal Test, I identify 'individuality' as the parameter and consider moving this parameter in the 'right' direction or towards increasing individuality. It would entail defining the 'best' with lesser regard to the social good and emphasizing the child's own good. For instance, choosing an embryo with the traits that correlate to psychopathology as parents might think that being a psychopath might help realize one's ambition. Another example could be choosing an embryo with a set of genes that correlates to high IQ over another embryo whose genes might correspond to higher empathy. If we find this move problematic, then we would consider moving the parameter toward the 'left' direction or becoming less individualistic. It would entail defining the 'best' with lesser regard to individuality and more credence to the social context. For instance, describing the 'best' is based more on what society thinks is the 'best' or the social good rather than the parents defining the 'best.' Another example could be choosing an embryo with a set of genes that correlates to higher empathy, oxytocin levels, or altruism over an embryo with a set of genes corresponding to high IQ. If we find this extreme move problematic, we should consider why the offspring born through natural birth is middle and the most optimal point of the two extreme positions mentioned above. We should question what it is about PPB's pursuit of the best, in terms of tangible consequences, that makes it unpalatable; it might be the case that we suffer from the Status Quo Bias.

As I discussed previously, we should also consider the costs of not becoming more individualistic in definable consequences. What if not becoming more individualistic is more costly than being less individualistic? We should remember that sticking to the status quo and not changing can also be costly.

To recapitulate, I briefly revisited PPB's critiques that I discussed in the second chapter. Then, I briefly explained the RT. Afterward, I applied RT to these critiques to demonstrate how these critiques might exhibit SQB and fail to justify the prejudice. In my next and last chapter, I will review what I have accomplished in the thesis and what areas need further exploration.

Chapter 5: Conclusion

This thesis attempts to identify potential Status Quo Bias in PPB by applying Reversal Test to its various critiques. Let us review what we have done so far.

In the first Chapter, I outlined Savulescu's principle of Procreative Beneficence. According to this principle, one should select the best child of the possible children one could have.[118] Needless to say, this principle has attracted numerous critiques from numerous authors. In the second chapter, I outlined PPB's four main critiques: Disability Rights Critique, PPB's inherent indeterminacy, PPB's logical flaws, and PPB's vain pursuit.

Third, I explained Bostrom's Reversal Test in detail, anticipated potential objections and addressed them. I explained that the Reversal Test considers the desired trait, often a positive deviation from the status quo. Suppose we find selecting the embryo with the desired trait ethically contentious.[119] In that case, we imagine selecting an embryo that lacks that desired trait and is a negative deviation from the Status Quo. If we find the latter also problematic, we conclude that choosing the embryo with the desired trait seems ethically contentious because of our affinity to the Status Quo.

Fourth and last, I applied the Reversal Test on the above-mentioned PPB's four main critiques. I demonstrated that all of the PPB's critiques have a potential implicit Status Quo Bias that makes them overly emphasize the PPB's possible negative outcomes. We found out that it's not the case that these critiques do not sufficiently highlight the PPB's most salient potential problems; nevertheless, our Status Quo Bias makes us over-emphasize the PPB's possible negative

[118] See Savulescu, 2001.
[119] See Bostrom & Ord, 2006

outcomes by evaluating the PPB in isolation from other existing and followed principles. To provide a fair assessment of PPB, one needs to zoom out from myopic scrutiny and skepticism toward PPB to juxtapose it with other principles that we already follow to ensure that our directed skepticism towards PPB is grounded in foreseeing its potential negative outcomes taken in relation to the outcomes of other principles and not merely a symptom of our hesitation toward change or something new.

The Reversal Test does not render these PPB's critiques ineffective. The Reversal Test merely exposes the Status Quo Bias in the limit cases where there is no reasonable justification for holding onto the Status Quo Bias. As discussed in the third chapter, there are cases when holding on to the Status Quo Bias is rational. For instance, as we discussed earlier, one could argue that it would not be wise to engineer a bigger heart as the ratio between the heart and the body size is already optimal; if it were otherwise, the process of evolution would have expectantly weeded out the suboptimal heart-body size ratios. In this case, the affinity towards the Status Quo size of the heart is reasonable. Similarly, One could also object to PPB's pursuit of the 'best' possible child based on this reasoning.

Further, the Reversal Test is not immune to objections. We covered five main objections against this test. First, we can apply RT only when there are no known negative consequences of moving the parameter in either direction. For instance, we are unsure about the negative consequences of moving the parameter toward high IQ. RT is applicable in cases when we are unsure about the effects of changing the parameter. If we clearly understand the consequences of keeping the parameter at status quo or changing the parameter in either direction, we can simply decide whether to shift the parameter by evaluating the corresponding consequences; in this case, we don't need the Reversal Test.

Nevertheless, changing the parameter in either direction is usually associated with side effects; some can be negative, further justifying the affinity for the Status Quo. This is where a PPB's critique could argue (if one can establish tangible negative consequences of applying PPB) that even if one uncovers the implicit Status Quo Bias, it would still make sense to stick to the Status Quo in light of negative consequences.

The second of the five RT's objections is the claim that millions of years of natural selection have already optimized the status quo parameters, at least in some cases: hence, one should not change them. One could argue for not employing reproductive technologies, selecting the embryos with desired traits, and abandoning the PPB's pursuit of the 'best' possible child altogether.

The fourth of the five RT's objections is that any action is good or bad only if it affects an existing person according to the person-affecting view.[120] In other words, one could argue that changing the parameter in the desired direction will not do any good unless it affects a living person. A PPB's critic could extend the argument and claim that PPB's pursuit of the 'best' possible child is non-sensical because it is not doing good to any living person.

The third of the five RT's objections is that there will always be transition costs which arise from changing the parameter in a proposed direction: even after establishing the benefits of suspending the status quo and changing the parameter in the proposed direction, there still might be substantial costs in implementing the proposed transition, making the change not worth it. A PPB's critic could cite the transitional financial, emotional, and social costs of inequality to make PPB's pursuit not worth it.

[120] See Arrhenius, 2003.

The last of the five RT's objections is that the RT applies only to the consequentialist objections to technologies, not considering other ethical accounts such as deontology and virtue ethics. RT only considers the consequences of changing the parameter. It does not consider the intention, duty or obligation in changing the parameter. Along similar lines, one could argue that PPB emphasizes the consequence and outcomes of choosing an embryo too much but is less concerned with apriori moral tenets.

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