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The dysgenics objection to longtermism

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ABSTRACT

Strong longtermism maintains that how we should act morally is determined almost entirely by the expected effects on the welfare of our descendants existing thousands if not millions of years into the future, who might include both other humans and any artificial agents with a comparable or higher moral status that we end up creating. It is based on three key assumptions: (i) that our descendants will have a moral status that is at least as high as ours and therefore should not have their welfare discounted by us; (ii) that there is a good chance that these individuals will vastly outnumber us; and (iii) that we can do things here and now that can be expected to positively shape the long-term trajectory of humanity. The aim of this contribution is to suggest that authors such as Will MacAskill and Hilary Greaves have been too optimistic about all these assumptions as a result of having ignored evidence that the populations of post-industrial countries are becoming less intelligent due mostly to the negative relationship that has emerged within these societies between intelligence and fertility and to the proclivity of intelligent people to delay parenthood.

1. Three assumptions of longtermism

Strong longtermism – henceforth 'longtermism' for short – is defined by William MacAskill and Hilary Greaves (2021, p. 2) as the view that 'that impact on the far future [which on their understanding does not refer to the next decade or even century, but rather to the next thousands and even millions of years] is the most important feature of our actions today'. As they go on to note, the deontic version of this view, which forms the subject of the present article, says that 'in the most important decision situations facing agents today, one ought to choose an option that is near-best for the far future and that […] delivers much larger benefits in the far future than in the near future' (Greaves & MacAskill, 2021, p. 26). Animating this maxim are three key ideas. The first is that the lives of future humans, as well as those of any artificial beings with comparable or higher moral status that we might create (who are conceptualized by longtermists as among our possible descendants), *should not be discounted* regardless of whether they live in 10, 1000, 1000 or even a million or billion years from now. To tease out this intuition, MacAskill gives the following example modified from Parfit (1986, p. 315):

> [S]uppose that, while hiking, I drop a glass bottle on the trail and it shatters. And suppose that if I don't clean it up, later a child will cut herself badly on the shards. In deciding whether to clean it up, does it matter when the child will cut herself? Should I care whether it's a week, or a decade, or a century from now? No. Harm is harm, whenever it occurs (MacAskill, 2022, p. 10).

As Greaves and he (2021, p. 18) explain, such a zero-discount rate is essential for longtermism, given that even modest discounting

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would greatly reduce the weight of future lives and thereby prevent the long-term future from being the key moral priority of our times.

The second idea is that we could be vastly outnumbered by our descendants as long as we do not go extinct within the foreseeable future, which even those who are relatively pessimistic about humanity's prospects still regard as the most probable outcome (Ord, 2020). According to Greaves and MacAskill, such large numerical disparities are especially likely to arise if we manage to colonise other planets.

> Even if we only settle the solar system, civilisation would have over 5 billion years until the end of the main sequence lifetime of the Sun and we would have access to over two billion times as much sunlight power as we do now', whereas if we were to settle the rest of the Milky Way, then 'we could access well over 250 million rocky habitable-zone planets, each of which has the potential to support trillions of lives over the course of their sun's lifetimes' (Greaves & MacAskill, 2021, p. 7).

It should be noted here that *even if* we fail to have a vastly greater number of human descendants, we may still end up having a vastly greatly number of *artificial descendants*, defined as digital beings made by us that possess a moral status that is at least comparable to ours. As Greaves and MacAskill (2021, p. 7) point out, there are several reasons for assigning a non-trivial probability to this scenario. Apart from the fact that such artificial agents are likely to require far fewer resources to exist than humans, it is likely to be significantly easier for them to reproduce, potentially as simple as copying a file on a computer. Still other reasons are that such entities would be able to survive in a comparatively wide range of environments and be well-equipped to endure the stresses of interstellar travel, thus facilitating space settlement. Taking all this into account, Greaves and MacAskill (2021, p. 9) conclude that even on a conservative estimate, the number of our expected descendants will be at least 10^{18}.

The third and final idea undergirding longtermism is that there are things we can do now to positively shape the long-term trajectory of humanity. One oft-mentioned example, which is predicated on the notion that our chances of re-evolving if we go extinct are vanishingly small (Greaves & MacAskill, 2021, p. 10), involves taking measures that help to prevent human extinction, such as investing in technologies that reduce the risk of large asteroid collisions or that protect us from natural or man-made pandemics. Other examples include, without being limited to, developing strategies for ensuring that an artificial superintelligence (ASI) does not become aligned with the goals of a malevolent actor, such as a brutal dictator, and establishing a sovereign wealth fund with a longtermist mission that would 'pay out whenever there becomes available some action that will sufficiently benefit the far future (in expectation), whether that is during the lifetimes of current citizens or later' (Greaves & MacAskill, 2021, p. 15).

The remainder of this contribution seeks to show that scholars such as Greaves and MacAskill have been too optimistic about all abovementioned ideas. Although I am not the first to question longtermism's foundational assumptions (among the first detailed critiques is a booklet by Emile Torres, 2021; for an overview of more recent critical writings, see Wilkinson, 2023, p.2), the empirical findings on which my criticisms are based have not been discussed before in the burgeoning literature on this new philosophy, which may be in no small part because they paint an unpleasant and politically sensitive reality. What they suggest is that the populations of post-industrial countries are *becoming less intelligent* due mostly to the negative relationship that has emerged within these societies between cognitive ability and fertility and to the tendency of intelligent people to delay parenthood. As I argue after presenting the available evidence for these claims (Section 2), such cognitive dysgenics makes it more difficult to positively shape the lives of our descendants (Section 3); reduces the likelihood that we will be vastly outnumbered by them (Section 4); and renders it doubtful whether they will have a moral status that matches or exceeds our own (Section 5). The final section concludes by considering why these challenges to longtermism have not been raised before (Section 6).

2. Evidence of cognitive dysgenics across the developed world

In recent decades, considerable evidence has surfaced that residents of many Western countries as well as high-income non-Western ones are becoming less intelligent (Dutton & Woodley of Menie, 2018; Egeland, 2022; Lynn & Harvey, 2008). Since intelligence, defined here as the 'ability to learn, reason and solve cognitive problems' (Plomin & von Stumm, 2018, 148), is a strongly heritable trait – according to current estimates, its heritability increases from circa 20 % in infancy to 40 % in adolescence, and up to 60 % or even 80 % in adulthood (Plomin & Deary, 2015) – many scholars believe that these declines are primarily caused by reductions in the prevalence of genetic variants associated with intelligence, i.e. by what I term 'cognitive dysgenics'. Specifically, three different mechanisms have been proposed.

First, as societies industrialize and living standards rise, a negative relationship tends to emerge between fertility and intelligence (Nyborg, 2012).This tendency for intelligent people to reduce their number of children has been found to be strongest among females; for instance, a review of studies from the United States, Europe, East Asia, and Domenica by Reeve et al. (2018) revealed a correlation for women of − .197 and for men of − .077 (Kolk & Barclay, 2019; Meisenberg, 2010). Second, besides having fewer children on average, intelligent individuals have a proclivity to delay childbearing, resulting in fewer generations of offspring than their less intelligent counterparts have (Kong et al., 2017; Woodley of Menie et al., 2019). As a study of declining IQ scores in Iceland has shown, such disparities in the number of generations – which in extreme cases involves intelligent people becoming parents in their mid- to late-30 s when those with lower IQs have already become grandparents – can lower the average IQ even when there are no significant intelligence-related differences in fertility rates (Kong et al., 2017). Third, and more controversially, because of global reductions in child mortality from approximately 40–50 % around 1800 to 4 % presently (Roser, 2023), many countries are witnessing a rise in mutational loads among their populations as individuals with harmful genetic mutations are more likely to have surviving offspring than was the case under the harsh selection pressures of earlier times (Aris-Brosou, 2019; Lynch, 2016). According to some scholars (e.g. Hill et al., 2018; Woodley of Menie, 2015), this not only compromises the physical health of later generations but also has deleterious implications for their cognitive abilities, the brain being a large mutational target.

Evidence that we are indeed witnessing cognitive declines across post-industrial societies, with losses estimated to be 0.87 IQ points per decade in Iceland (Woodley of Menie et al., 2017); 1.19 IQ points per decade in Taiwan (Chen et al., 2017); and 1.23 IQ points per decade in the US and UK combined (Woodley of Menie, 2015), is provided by several sources, including:

- Decreases in alleles linked with intelligence and educational attainment (Hugh-Jones & Abdellaoui, 2022; Kong et al., 2017).
- Prolonged declines in IQ and PISA test scores across various East Asian regions and parts of Europe, including Norway, Denmark, the UK, the Netherlands, Finland, France, and Estonia (Dutton et al., 2016; Meisenberg & Lynn, 2023). These declines are reversing 20th-century increases in IQ test scores known as the 'Flynn Effect,' which have been attributed to advancements in education, nutrition, and health that are believed to have reached a peak in many industrialized societies (te Nijenhuis & van der Flier, 2013).
- A significant decrease in the number of exceptional talents in science and other areas of human achievement (Dutton & Charlton, 2016; Simonton, 2013).
- A noticeable slowdown in the rate of macro-innovation (Huebner, 2005; Murray, 2003).[2]

Additional evidence is offered by shifts in various specific abilities that have been found to be significantly correlated with intelligence (cf. Dutton & Menie, 2018), such as:

- Slower reaction speeds (Madison, Woodley of Menie, and Sänger, 2016; Woodley, te Nijenhuis, and Murphy, 2013).
- Diminished spatial perception (Pietschnig & Gittler, 2015).
- Decreased vocabulary size and usage of complex words (Woodley of Menie, Fernandes et al., 2015).
- Weaker verbal and visuospatial working memory (Wongupparaj et al., 2017).
- Worse color discrimination (Woodley of Menie and Fernandes, 2016).

What I want to propose next is that if, as these studies suggest, developed countries are indeed becoming less intelligent on a macro-level, then this makes all three assumptions undergirding the longtermist philosophy less likely to be correct. In so doing, I will assume that these losses are mostly the product of cognitive dysgenics, which is not just supported by the lower fertility and delayed parenthood among the more intelligent but also by the observed reductions in genetic variants linked with cognitive ability and educational attainment (Hugh-Jones & Abdellaoui, 2022; Kong et al., 2017). However, it is worth stressing that *if the losses in question do turn out to be primarily environmental*, my criticisms would still largely hold, meaning that my use of the term 'cognitive dysgenics' in the remainder of this article could be replaced with the more neutral term 'macro-level intelligence losses' without altering the thrust of my arguments.

3. Cognitive dysgenics and our ability to positively shape the far future

The foundational assumption of longtermism that is perhaps most obviously challenged by cognitive dysgenics is the notion that *our actions can positively shape the long-term trajectory of humanity*. To see how such dysgenics makes it more difficult to exercise this kind of lasting influence, notice that if we are indeed losing about one IQ point per decade in post-industrial countries (which tend to have by far the highest intelligence levels; see Lynn & Becker, 2019[3] and Rindermann, 2018), then over the span of a mere century, we will have evolved into a species that is significantly less intelligent than we are at present. To give a sense of the magnitude of the expected change, Edward Dutton and Bruce Charlton note that a difference of 10 IQ points corresponds roughly to the difference in cognitive abilities between an academic and a school teacher or to that between a school teacher and a factory worker (Dutton & Charlton, 2016, p. 123). Without trying to list all the ways here in which such intergenerational cognitive discrepancies impede our ability to positively influence humanity's long-term trajectory, one important way is that, all else being equal, the more cognitively superior we are to our descendants, the more difficult it will be for us to pass on knowledge that will help our descendants to effectively promote longtermist causes.

To illustrate this, consider the challenge of anthropogenic climate change (henceforth 'global warming' for short). Even if not a direct threat to the survival of our species (Ord, 2020, Chapter 4), global warming creates conditions under which both human extinction and an irrecoverable civilizational collapse become more likely, which is why longtermists such as MacAskill regard

[2] To be sure, there is at least one alternative explanation for this phenomenon. Drawing on work by Bloom et al. (2020), Wiliam MacAskill has proposed that the slowdown in the macro-innovation rate is caused (primarily) by the fact that innovation-wise, there is less low-hanging fruit now than there was in the past (MacAskill, 2022, Chapter 7). While acknowledging that we always build on the knowledge of our predecessors, his thought is that standing on their shoulders gets us less far in our day and age because of the fact that new ideas become increasingly more difficult to find. Although an in-depth discussion of this topic is beyond this article's scope, I should point out that even if this trend exists, it does not rule out that discoveries also become harder to make as a result of reductions in macro-level intelligence, which is a possibility that MacAskill does not consider.

[3] Although an earlier version of Lynn's national IQ-database (see Lynn & Vanhanen, 2012) has received some justified criticisms (e.g. Moreale & Levendis, 2014; Wicherts et al., 2010), it bears mentioning that a recent assessment by Warne (2023) found that its latest iteration (see Lynn & Becker, 2019) possesses 'a great deal of validity evidence in favour of using it' notwithstanding certain persisting shortcomings and that its main findings are consistent with those of Rindermann (2018), who draws on tests such as PISA (Programme for International Student Assessment) and TIMSS (Trends in International mathematics and Science Study) to gauge what he terms 'national cognitive ability levels'.

investments in clean energy sources as worthwhile endeavours (MacAskill, 2022, Chapter 6; cf. Ord, 2020, p. 178). It does this, for instance, by increasing heat stress and droughts; raising the incidence of floodings, exacerbating competition over progressively scarce natural resources; and depleting the fossil resources that we may need to rebuild society if we do suffer a civilisational collapse (more on this later). What is apposite for present purposes is that if we are to make any progress in counteracting global warming, then it seems indispensable that future generations learn many of the things we know about this complex problem and subsequently build on this knowledge to help solve it. However, when future generations are less intelligent than we are – but still intelligent enough to put tons of carbon dioxide and other greenhouse gasses into the atmosphere, which can be done in cognitively relatively undemanding ways such as by burning coal and cultivating livestock – then the chances that their members will be able to acquire this knowledge are diminished. This is not simply because intelligence and the ability to learn are strongly correlated if they can be separated at all (Jensen, 1989), although this matters. Cognitive discrepancies between our generation and theirs also render it harder to *put ourselves in their shoes* and thereby teach them effectively due to the 'curse of knowledge', which is the human tendency to overestimate how much others know or are able to (quickly) learn about a topic in which we ourselves are well-versed (Camerer et al., 1989; Tullis & Feder, 2023; Wiegman, 2007).

But the difficulties do not stop there. As well as inhibiting the transmission of knowledge that is useful, if not essential, for promoting various longtermist causes, cognitive dysgenics also diminishes our ability to *motivate future generations to address problems that either do not affect them or that simply do not affect them in the short term* (cf. Dutton, 2023, p. 201), which may include global warming for those living in areas where such warming is unlikely to wreak havoc, or simply not anytime soon. This is so for two reasons. The first is that intelligent people are generally more altruistic and pro-social than their cognitively less gifted counterparts, which – all else being equal – makes it more likely that they will make sacrifices for others even when there is no expectation of a personal reward (Böckler et al., 2016; Guo et al., 2019; Millet & Dewitte, 2007). The second is that intelligence correlates negatively with temporal discounting, i.e. with putting premiums on short-term gains (Basile & Toplak, 2015; Gabaix & Laibson, 2017; Shamosh & Gray, 2008). Even if these intelligence-related psychological differences do not rule out that future generations will pursue (some) longtermist goals – especially when they have short-term personal interests in the fulfilment of such goals, their members might well pursue them – they still reduce the probability thereof, along with the probability that these goals will be pursued on longtermist grounds as opposed to egoistic or otherwise sectarian ones. To appreciate this, we must remember that longtermism presupposes exceptionally high levels of altruism and temporal neutrality (see Section 1).

Having focused on climate action measures in the penultimate paragraph, it is important to highlight that cognitive dysgenics and it associated macro-level psychological changes *also reduce the likelihood that other measures deemed effective by longtermists* will bear fruit. Consider MacAskill and Greaves's favorable discussion of the establishment of a sovereign wealth fund with a longtermist mission. While acknowledging that the establishment of such a fund comes with an 'annual risk of future governments being misaligned and using the money poorly', they write that 'this risk could be mitigated via constitutional enshrinement of the mission, and would be compensated by the fact that the fund would benefit from compound returns of investment' (Greaves & MacAskill, 2021, pp. 15–16). However, if cognitive dysgenics is real, then this should weaken our confidence that such resources will be used to positively influence the long-term trajectory of humanity due to the aforementioned tendencies of less intelligent individuals to have stronger time preferences; lower levels of altruism; and reduced ability to solve complex questions, including the question of which actions can be expected to do the most good for people living in the far future.

Against such pessimism, MacAskill and Greaves might note – as they do in their article – that many long-lasting charity trusts in the Anglo-American world have succeeded, such as the John Clarke Trust set up in 1676 and Benjamin Franklin's investments in the cities of Boston and Philadelphia in 1790. However, this track-record is not particularly informative once two factors are taken into account. The first is that the period stretching from the Middle Ages until the modern era is one during which macro-level intelligence and relevant associated psychological traits such as weak time preferences and pro-social values are believed to have significantly increased within the West (Clark, 2015; Pinker, 2012; Woodley of Menie et al., 2017). This is evinced by, among other things, increases in literacy and numeracy (Clark, 2009); increases in macro-level innovation (Murray, 2003); reductions in interest rates reflecting diminished temporal discounting[4] (Clark, 2009); and reductions in violence (Pinker, 2012), with several studies reporting that the use of words related to altruism and moral virtue reached a pinnacle in the 19th century and has since been on a steady decline (Greenfield, 2013; Kesebir & Kesebir, 2012; Woodley of Menie et al., 2017). The second factor was mentioned already, namely that the estimated rate of cognitive dysgenics at roughly one IQ point-loss per decade is very high. Together, these factors suggest that the success of many century-old charity trusts in the UK and North America may well have been contingent on the fact that the demographic circumstances have been favourable, making it difficult to extrapolate from this era to a future in which, holding everything else constant, widespread psychological changes are likely to cause populations to be less receptive to the longtermist philosophy as well as less capable of effectively implementing its principles.

Another way in which longtermists could seek to defend a more optimistic view about our ability to positively shape the long-term trajectory of humanity is by noting that cognitive dysgenics is not equally distributed among all groups. Specifically, they might point out that religious fundamentalists appear to be less susceptible to it than more secular individuals, with one of these groups, namely the Mormons or the Church of the Latter-Day Saints, showing slightly positive selection for intelligence (Kirkegaard & Dutton, 2022). When we consider further that, unlike most secular groups, religious fundamentalists simultaneously tend to be capable of maintaining above-replacement fertility (Dutton & Rayner-Hilles, 2022; Kaufmann, 2011; Peri-Rotem, 2016), the prospect of there being a sizable

[4] Which it was noted earlier this section is positively associated with intelligence.

number of people in the future with the brains and the associated psychological proclivities (i.e. low time preferences and strong altruism) to embrace and realize longtermist principles might stark to look much brighter.

What to make of this type of optimism? While there has been scholarly work trying to demonstrate the compatibility of effective altruism, from which longtermism is an offshoot, with various religious traditions (Riedener et al., 2021), I do not see any grounds for thinking that religious fundamentalists can be persuaded in large numbers to endorse longtermism. On the contrary, there are several strong reasons for *doubting whether this a real possibility*. They include – but are not necessarily limited to – the fact that many orthodox believers have a strong need for cognitive closure (e.g. Kossowska et al., 2018); the fact that questioning orthodoxy is usually heavily socially and/or physically punished within their communities (which is related to the aforementioned need for cognitive closure); the fact that the costs of leaving these groups tend to be high if exiting is possible at all (e.g. Björkmark et al., 2022; Mazie, 2005; Wood, 2012); and the fact that longtermism and effective altruism more generally has a decidedly secular pedigree and, one would suspect based on this statistic, corresponding secular bend, with an overwhelming majority of effective altruists (79 %) identifying as atheist, agnostic, or non-religious (Moss & Sleegers, 2023).

4. Cognitive dysgenic and the number of future people

This brings us to a second foundational assumption of longtermism that is rendered less plausible by cognitive dysgenics, namely the one saying that *our descendants will vastly outnumber us*. To start with, for humanity to become less intelligent reduces the probability that we will ever acquire the knowledge necessary to settle other planets as well as the one necessary to develop artificial sentience, which like the knowledge required to solve the problem of global warming are extremely intricate. Even if it becomes possible at a certain stage of technological development to wholly outsource the acquisition and real-life implementation of these types of knowledge to artificial intelligence, the chances that we will ever reach this stage is lowered with every IQ point that is lost, especially since – as mentioned before – these losses are occurring within high-IQ countries that are responsible for the bulk of global innovation (Jones, 2016; Rindermann, 2018). Yet, if this is correct, then given that colonizing space and developing artificial sentience are among the main ways in which humanity can substantially expand its future size (see Section 2), prolonged cognitive dysgenics is likely to strongly limit the number of our descendants that we can anticipate to have.

To be sure, MacAskill and Greaves argue that the case for longtermism already goes through when we can expect 'only' 10^{18} descendants, which they believe we can if we assume a modest 0.0000001 % probability of human civilisation expanding across the Solar System, or even when a 'mere' 10^{14} descendants are expected, which they believe is a realistic estimate if humanity remains earth-bound and never develops artificial sentience (Greaves & MacAskill, 2021, pp. 8–9). Responding to these figures, David Thorstad (2023) has argued recently that even this last estimate might be much too sanguine. As he explains, what it overlooks is that many demographers expect the world population to peak by 2100 at 11 or 12 billion and then start to decline, with many higher-income countries already experiencing below-replacement fertility including South Korea (1.1 child per woman), Italy (1.3), Japan (1.4), China and Brazil (1.7) and the United States (1.8) (United Nations Population Fund, 2023). What is pertinent for us is that whether fertility rates will remain as low as they are currently within large parts of the world or drop further still, if the aforementioned studies supporting cognitive dysgenic across developed societies are accurate (see Section 2), then we have already reached our peak per capita intelligence and can expect such dysgenics to independently exert a significant contracting influence on the total number of people.

In order to see this, it should be observed that the less intelligent societies become, the more difficult it will be for them to sustain the economic growth and maintain the advanced technologies across various sectors (e.g. agriculture, medicine and health, energy-production) that have allowed us to reach a historically unprecedently large population of 8 billion people (cf. Sarraf et al., 2019, pp. 280–281), let alone to improve these technologies which according to experts from the United Nations is necessary to have an environmentally sustainable population of this size (United Nations, 2023). Support for this claim comes from studies showing that even when controlling for factors such as legal origin, landlockedness, geography, religion, and colonial history, a country's average intelligence consistently comes out as most important predictor of economic prosperity and innovation with only small amounts of reverse causality reported, indicating that the primary direction of causality is from intelligence to economic prosperity and innovation (Azam, 2017; Christainsen, 2013; Hanushek & Woessmann, 2015; Jones, 2016; Lynn & Vanhanen, 2012; Meisenberg, 2012; Rindermann, 2018; Squalli & Wilson, 2014). In addition to this, research by Richard Lynn and Tatu Vanhanen suggests that average intelligence levels are strongly positively correlated with a range of other factors conducive of population growth, including life expectancy (.76), quality of water (.62), and quality of sanitation (.71), while being strongly negatively correlated with several variables that inhibit such growth, including malnutrition (−.52) and tuberculosis (−.57).[5] (In line with these findings, some scholars have presented evidence that macro-level cognitive declines may have contributed to the fall of the Islamic civilisation of 13th century Baghdad as well as to that of the Western Roman empire several centuries earlier (Meisenberg, 2007; Piffer et al., 2023; see also Weiss, 2007).

There is one more way in which cognitive dysgenics can be expected to significantly lower the number of our expected descendants. This is that by hampering technological innovation, it is likely to prolong our reliance on fossil fuels such as coal and oil.[6] Besides causing many pollution-related deaths – according to on recent study, no less than 1 in 5 deaths globally are attributable to fossil fuel pollution

[5] But see footnote 2 for some important qualifications regarding their national IQ-dataset.

[6] While it is true cognitive dysgenics can simultaneously reduce our ability to continue operating polluting technologies, we saw earlier that some of the most polluting human activities, such as consuming coal and cultivating livestock, are cognitively relatively undemanding.

(Vohra et al., 2021) – such prolongments deprive us of the resources we most probably need to re-industrialize in the event of a civilisational collapse, as research by Lewis Dartnell (2014) shows that doing so (predominantly) with green energy resources such as solar and wind is a formidable challenge. As MacAskill – drawing on Dartnell's work – explains, there are two reasons for this (MacAskill, 2022, Chapter 6). One is that constructing and maintaining technologies such as solar panels, which would be necessary to get enough milage out of green energy resources, requires two things that will (almost) certainly be lost in the case of a civilizational collapse, namely the presence of high-skilled engineers and that of complex international supply chains. The other reason is that solar and wind are unable to generate the high-temperature heat on which sectors essential to industrialization rely, including the cement, steel, brick, and glass industries. As he goes on to note, comparable problems beset the use of nuclear energy, writing that 'in a postcollapse world, it would be very difficult to mine and transport nuclear fuel and to power up, run, and maintain technologically complex nuclear-power stations', thus rendering 'nuclear-powered reindustrialisation […] unlikely' (MacAskill, 2022, p. 396). Once we take all this into account along with the fact that civilisational collapse appears to be the norm in human history (Morris, 2013) and the fact that industrialisation is a *sine qua non* for having large populations due to the large amounts of energy necessary to sustain such populations, we seem to have identified yet another mechanism through which cognitive dysgenics can be anticipated to strongly limit the sizes of future populations.[6]

A critic might say that all this presupposes that macro-level intelligence losses will continue for the foreseeable future, which is something societies can prevent. The most promising ways of doing so appear to be to invest in education; enact policies that encourage and incentivize intelligent persons to have (more) children and have them at younger ages; and develop and deploy embryo selection and gene editing to enhance people's intelligence (cf. Anomaly, 2024, Chapter 2).

Without wanting to rule out that one or more of these interventions will be undertaken, there are good reasons for not expecting the cognitive tide to be turned anytime soon. One is that although a loss of one IQ point per decade is substantial over several decades, such losses look too gradual to be readily noticed at any given time. While it might be pointed out that many laypeople have become aware of another dangerous gradual process in recent years, namely global warming, this process is accompanied by certain conspicuous events such as rises in the incidence of extreme and unusual weather events that do not seem to have an equivalent on the intelligence front. For even if intelligence losses render people more prone to causing accidents and making stupid mistakes (Dutton & Woodley of Menie, 2018), the link between these things and societal cognitive decline appears less evident than the one between extreme or unusual weather events and global warming, apart from the fact that technological advances such as the invention of autopilot and the (partial) automation of cars may currently be preventing many consequential mistakes that people would have made had these forms of technology not been available or simply not been as sophisticated as they are now.

Another reason for doubting whether macro-level intelligence losses will end in the near future is related to the contemporary *zeitgeist*. Whereas large shares of individuals, including many members of political and academic elites, were worried about cognitive dysgenics until roughly the 1960s (Dutton, 2023, Chapter 8), the backlash to the horrific sterilisation practices that took place in Nazi-Germany as well as in other Western countries such as Sweden where those with particular ethnic backgrounds or mental disabilities were forcefully sterilized (Levine, 2017; Marttinen, 2022) has made discussion of this topic largely taboo. Because of this, it seems significantly more difficult these days for people to become aware of such dysgenics than several decades ago even though articles about falling IQ scores are published in popular media from time to time (e.g. Herz, 2023; Robson, 2019; Smith, 2018).

Still another reason for being pessimistic about a near-term cessation of macro-level intelligence losses is that all the above-mentioned interventions have at least some serious shortcomings and/or features that inhibit widespread uptake.

4.1. Education

Regarding investments in education, there are three grounds for doubting the ability of this type of intervention to wholly, or even merely mostly, offset the macro-level intelligence declines produced by cognitive dysgenics. The first is that if, as the contemporary evidence suggests, intelligence has a heritability of 0.6–0.8 in adulthood (Plomin & Deary, 2015), then this strongly constrains the intelligence gains that can be achieved via environmental improvements, including educational ones (cf. Caplan, 2018). The second is that the maximum possible gains on this front seem to have already been largely achieved within industrialized societies. For although every additional year of schooling is associated with a 1–5 point increase in IQ for children and adolescents (Ritchie & Tucker-Drob, 2018), Meisenberg and Lynn (2023, p. 5) rightly observe that the 'length of schooling cannot be extended much further when every youth already goes to school for 12, 16, or more years', which could help to explain the aforementioned protracted declines in IQ and PISA test scores within large parts of Europe and North-East Asia (Dutton et al., 2016; Meisenberg & Lynn, 2023). What is more – and this brings us to the third ground – the less intelligent populations become, the less likely it is that their members will create environments that are cognitively stimulating and conducive of learning, given that intelligent people are better able to create such

[7] Notice that this does not rule out that there might be ways in which cognitive dysgenics is *simultaneously boosting the number of our descendants*. Most importantly, existential risks posed by technologies whose operation at least for now require high levels of human knowledge, such as those posed by artificial intelligence and sophisticated biological weapons, could be reduced by such dysgenics, although it must be observed that any advanced technologies that we deploy to guard ourselves against existential risks and other major threats also become more difficult to sustain because of it (cf. Bostrom, 2019). Whereas a detailed exploration of exactly how these countervailing forces play out is beyond this article's scope, it looks to me that the fact that cognitive dysgenics renders it difficult to maintain the economic and technological infrastructures needed to sustain large populations and to make scientific breakthroughs that allow us to colonize space; create artificial minds; and end our dependency on fossil fuels (the depletion of which we saw constitutes a formidable obstacle to re-industrialisation in the case of a civilisational collapse) exerts a *much stronger force* on the number of our descendants than do any population-increasing aspects of this type of dysgenics.

environments for themselves and others than those with lower cognitive capacities (Dutton & Woodley of Menie, 2018; Plomin, 2018).

4.2. Pronatalist policies

As for policies aimed at encouraging and incentivizing intelligent people to have more children and to have them earlier in life, a fair amount of scepticism appears warranted as well. The family-friendly welfare policies and financial incentives introduced in countries such as Sweden, Hungary, and Singapore have shown only moderately successful in increasing fertility among intelligent women, indicating that many members of this group are intrinsically motivated to delay or forego parenthood in order to develop themselves academically and/or professionally (Cook et al., 2023; Lynn & Becker, 2019, pp. 321–328; SCB, 2023). Moreover, *unless* such financial incentives are restricted to the more intelligent, perhaps by making them dependent on the amount of taxes paid – which as Heiner Rindermann (2018) has noted is unlikely to prove popular in Western societies as it offends against widespread egalitarian sensibilities – there is a risk that the average intelligence will drop further as a result of these provisions being disproportionally used by low-intelligence individuals (cf. Perkins, 2015).

4.3. Embryo selection and gene editing

Turning finally to embryo selection and gene editing, several complications present themselves. For starters, we are still far removed from creating gene editing that is safe for humans (Davies, 2019). But even if it becomes safe in the future, the chances of this practice, as well those of using embryo screening to select for intelligence as opposed to simply leveraging it to select against hereditary diseases such as Sickle Cell and Tay-Sachs, receiving widespread uptake anytime soon are lowered by the aforementioned fact that these practices carry the yuk-factor for many people as a result of being associated with Nazi-style eugenics (Dutton, 2023, Chapter 8; Levine, 2017; but see Zigerell, 2020), as well as by the fact that among orthodox-religious groups – who are projected to an inherit a progressively larger share of the world's population due to their comparatively high birth-rates and sufficiently high retention-rates (Dutton & Rayner-Hilles, 2022; Kaufmann, 2011; Peri-Rotem, 2016) – they are commonly perceived as 'playing for God' (Pew Research Center, 2022). Yet another complication is that even individuals who are not disgusted by embryo selection often have good grounds for favouring natural conception, which tends to be less expensive and less of a hassle than artificial conception (Dutton, 2023, p. 194).

It might be replied that in vitro fertilization is already heavily utilized in countries such as Israel, Japan, and Denmark, and that once it becomes possible to not just select against hereditary diseases but also to select in favour of desirable psychological traits such as intelligence, which is positively associated with e.g. occupational status and socioeconomic success (Belsky et al., 2018), there is a good chance that many will do so to give their offspring a leg up in life. Furthermore, as more and more individuals avail themselves of this opportunity, positive feedback loop are likely to occur. For one thing, one would expect selection for intelligence to become decreasingly associated with Nazi-style eugenics, thereby fuelling further usage.[8] For another, one would expect it to become increasingly costly to avoid due to the advantages that enhanced children enjoy when competing for positional goods (think of university places and high-status jobs), which is similarly likely to promote more widespread usage (cf. Anomaly, 2024, Chapter 2).

What is pertinent for our purposes is that *even if* embryo selection for intelligence and possibly even gene editing for intelligence will take off in some countries, it remains questionable whether this will offer a solution. Since we live in an era where intelligence has become inversely correlated with fertility and reproductive debut (see Section 2), boosting people's intelligence through these technological means, as well as through education, could well lead to fertility reductions and reproductive delays among the more cognitively gifted that neutralize said intelligence gains on a population-level (cf. Dutton, 2023, p. 198). In fact, insofar as such fertility reductions and reproductive delays outpace the relevant intelligence gains, the net result might even be a *reduction in the average intelligence*, and the fact that countries with some of the highest intelligence levels, such as South Korea, Hong Kong, Taiwan, Singapore, and Japan, also have some of the lowest birth rates certainly does not bode well. All in all, then, it appears while embryo selection and gene editing hold significant promise in allowing humanity to overcome cognitive dysgenics, it is by no means obvious that these technologies are going to be widely used to increase people's cognitive abilities and, to the extent that they are, that this will prevent average intelligence levels from falling (further), given the proclivity of intelligent individuals to both have fewer children and to become parents later in life than their less intelligent counterparts.[9]

[8] I am grateful to one of the reviewers for raising this point.

[9] Lest I be misunderstood, I am not denying that even in the absence of widespread usage of embryo selection and gene editing, there probably will be a point at which current cognitive declines are reversed. As mentioned already, recent evidence suggests that the Mormons in the US have both above-replacement fertility rates and somewhat positive selection for intelligence (Kirkegaard & Dutton, 2022). Were such groups to expand further – and the projections are that high-fertility fundamentalist communities will form an increasingly larger share of the world's population (Dutton & Rayner-Hilles, 2022; Kaufmann, 2011; Peri-Rotem, 2016) – this could help to bring about such a change of direction, albeit it remains unclear exactly how many of these communities have eugenic fertility. Alternatively, we might re-enter a stage of harsh Darwinian selection where there is strong selection for genetic intelligence as existed in Europe from the Middle Ages until broadly the mid-19th century (Clark, 2015; Dutton & Woodley of Menie, 2018). If the historical record is any indication, this is arguably the most plausible reversal-scenario, as civilisational collapse turns out to be the norm rather than the exception (Morris, 2013). What is important for our purposes is that *even if* cognitive dysgenics will be reversed eventually, its existence still significantly lowers the number of descendants that we can expect to have. This not only because such reversals are not yet on the horizon, but also because it is not evident that humanity will bounce back from dysgenics-induced civilizational declines that bring our species back to pre-industrial levels of development (see my earlier comments about the potential obstacles to re-industrialization).

At this stage, some may argue that I have focused too much on the intelligence levels of societies as a whole and not enough on the intelligence levels of their cognitive elites who are responsible for most of the scientific and technological innovation (Burhan et al., 2014; Dutton & Charlton, 2016; Ghiglino, 2012) and thereby indirectly for much of the per capita economic growth (Maradana et al., 2017). For example, utilizing 51 indicators of the Social Progress Index (SPI) and six 6 economic variables, Emil Kirkegaard and Noah Carl have found that for '93 countries with available data, average cognitive ability explained 57 % of the variation in country performance' but that 'adding the 95th percentile score increased this to 66 %' (Kirkegaard and Carl, 2022, p. 677; cf. Rindermann, 2018). Given these disproportional economic and technological contributions, it might be thought that a decline in a society's average intelligence is not problematic as long as there remains a group of inhabitants who are both smart enough and numerous enough to create and maintain the economic and technological infrastructures necessary for sustaining large populations. However, if this is correct, then all embryo selection and/or gene editing might need to accomplish is to *ensure that such groups persist*.

Whereas this may be true, the fact that the cognitively gifted within both Western and Eastern post-industrial countries have fertility rates that are well below replacement levels (Meisenberg, 2010; Roser, 2024; Woodley of Menie et al., 2019) casts doubt on whether enough highly intelligent individuals will remain present even if embryo selection and gene editing for intelligence are practiced. This is so particularly if Dutton and Rayner-Hilles (2022) are right in their predictions that (i) many societies will destabilize due to cognitive dysgenics and that (ii) this will cause many of their smartest members to migrate and end up gathering in a highly limited number of places, akin to how they note many English elites moved to Byzantium during Europe's Dark Ages in search of a more stable and civilized society (Dutton & Rayner-Hilles, 2022, p. 189). While it might be held that low elite fertility can be solved by selecting not only for intelligence, but also for desires to have larger families (fertility being a moderately heritable trait; Kim & Lee, 2019), it is unclear whether sufficient people will select for such desires. Indeed, when we consider the anti-natalist ethos that currently seems to be highly prevalent among younger generations within the West (Pew Research Center, 2021), alongside the protracted rise of individualism within both Western and North-East Asian countries (Ogihara, 2017, 2023; Sarraf et al., 2019), we have positive reasons for *being sceptical of this*. In short, even if embryo selection and gene editing will eventually provide us with the means to ensure the continued presence of cognitive elites capable of making economic and technological contributions that enable large populations, it remains highly uncertain whether these tools shall be used in ways that will achieve this goal.

5. Cognitive dysgenics and the moral status of future people

My contention until now has been that if – as mounting evidence indicates – cognitive dysgenics exists across the industrialized world, then this should significantly reduce our credence in two of longtermism's foundational assumptions compared to a situation where such dysgenics did not exist. These assumptions are (i) that there are things we can do here and now that are likely to positively shape the long-term trajectory of humanity, and (ii) that our descendants are likely to vastly outnumber us. In support of (i), I suggested that people with lower IQs have certain psychological features, namely relatively strong time preferences and weak levels of altruism and pro-sociality, that make it more difficult to sway them to adopt longtermist goals than those who are better cognitively endowed, apart from the fact that their ability to pursue such goals successfully is impeded by their lesser intellect. And in support of (ii), I suggested that for human populations to become less intelligent renders it not only more difficult for us to settle space and to develop artificial sentience, which are two ways in which we can potentially greatly increase our number of descendants. It also makes it more challenging for us to preserve and where necessary update the economic and technological infrastructures required to sustain billions of human lives on this planet, as well as to cease our reliance on fossil fuels, which, in addition to causing numerous pollution-related deaths, is harming our prospects of re-industrializing in the event of a civilisational collapse.

In this section, I want to argue that if – as seems plausible – cognitively abilities are a major determinant of moral status (cf. Jaworska & Tannenbaum, 2023), then cognitive dysgenics also challenges the remaining foundational assumption of longtermism, according to which our descendants will have a moral status that is at least as high as ours and therefore should not have their welfare discounted by us. For while it is widely accepted these days that all human beings, including our descendants, have equal moral status, with Will Kymlicka writing that 'moral equality constitutes the "egalitarian plateau" for all contemporary political theories' (Kymlicka, 1990, p. 5), it is hard to see how reductions in humanity's intelligence that bring us closer to the intelligences of species commonly believed to possess a lower moral status, including our primate cousins, could not matter morally and normatively. That is, if intelligence-losses make us more (non-human) animal-like, and animals are morally inferior to us by virtue of their lower cognitive capacities as e.g. Peter Singer has suggested, noting that 'the most obvious candidate for regarding human beings as having a higher moral status than animals is the superior cognitive capacity of humans' (Singer, 2009, p. 567), then all else remaining equal, the conclusion that our less intelligent descendants will have a lower moral status than us looks inescapable,[10] as does the normative implication that we should at least somewhat discount the lives of these individuals, assuming our behaviour ought to track differences in moral status just as our unequal treatment of animals and humans does.[11] (Another corollary I explore elsewhere (self-citation omitted) is that, ceteris paribus, the differences in moral value between humans and non-human animals will shrink, such that in cases of animal-human conflicts, we might need to prioritize the interests of animals more often in the future in order to avoid being

[10] Although this implication has not received any scholarly attention, there is a related debate about whether creating humans with greater intellectual abilities than we currently possess would confer on these individuals a higher moral status. For a negative answer, see Buchanan (2009); for positive ones, see Agar (2013) and Anomaly (2024).

[11] Which is not to suggest that we are currently giving the welfare of animals enough weight – practices such as factory-farming cast strong doubt on this. The point is simply that discounting the lives of animals vis-à-vis those of humans seems appropriate up to a certain degree.

'speciest' (cf. Singer, 2009).).

Of course, to determine whether cognitive dysgenics lowers the moral status of future humans overall, one must consider possible changes in other determinants of moral status as well. For example, if sentience is a determinant as is widely believed (Jaworska & Tannenbaum, 2023), then insofar as future generations of humans are likely to have stronger experiential capacities than us, especially ones to experience pain and pleasure, this might enhance their moral status relative to ours. Similarly, insofar as they are anticipated to have more developed moral abilities, or simply be likely to live more moral lives than us (cf. Steinhoff, 2014), this could act as a status-enhancer.

Whereas all this is true, it is highly doubtful whether why any reductions in moral status produced by macro-level intelligence losses will be accompanied by such off-setting changes in other determinants of this status. To the best of my knowledge, there exists no evidence of intelligence being negatively correlated with sentience. And even if intelligence can help individuals to commit greater evils than they would be able to if they were less smart – a case in point might be the atrocities committed by the leaders of the Nazi-regime, many of whom many were found to have exceptionally high IQs during the Nuremberg Trials; Linder (n.d.) – it does not seem that less intelligent people generally live lives that are morally better than those of their more cognitively gifted counterparts. On the contrary, the aforediscussed finding that intelligence is positively correlated with altruism and pro-sociality might be interpreted as evidence that their lives tend to be *less moral*, although some have resisted this conclusion by arguing that the moral worth of our behaviours is inversely proportional to our cognitive and other natural endowments (Carini, 2023). Yet, if these observations are accurate, then while there could still be hitherto undiscussed (scalar or range-property) determinants of moral status that are negatively correlated with intelligence – absence of evidence is not evidence of absence – the fact that it is very difficult to think of what these might be suggests that cognitive dysgenics can be reasonably assumed to lead to overall reductions in moral status.

At this point, a critic might concede this, but argue that having a lower moral status does not allow us to discount the welfare of future people. Were this the case, they might say, then discounting the welfare of relatively unintelligent current persons must be similarly permitted, which they may view as a *reductio*.

While a detailed discussion of this issue is beyond this article's scope, suffice it to note that certain moves could be made to try to defend discounting the welfare of less intelligent future generations,[12] but not the welfare of those who currently occupy the left side of the intelligence-distribution (although this latter practice has been defended by at least one philosopher; see Kershnar, 2000). One such move would be to argue that any differential treatment among contemporaries comes with a high risk that the welfare of certain individuals will be overly discounted and that this will result in cruel and degrading behaviour towards them, which is a worry that has led Andrea Sangiovanni (2017) to argue for treating existing people as having the same moral status even in the absence of compelling reasons for thinking that they are morally equal in a metaphysical sense. However, for this move to succeed, it would need to be shown, among other things, that the risk of undervaluing the interests of less intelligent future generations either does not exist or simply is not large enough to require us to similarly treat these groups as moral equals. Another possible move – the present list is not necessarily exhaustive – would be to maintain that gauging the varying cognitive capacities of current individuals, which would be required to know whose welfare must be discounted, is morally impermissible because it fails to respect them. On this view, developed by Ian Carter (2011), once beings possess certain traits such as rationality, or do so to a sufficient degree, it becomes morally necessary to treat them as 'opaque' in order to honour their dignity, thereby rendering interpersonal evaluations of said traits off-limits in many if not all cases. For this second move to be successful, one thing that would need to be demonstrated is that there is either no disrespect in assuming that future people will be less intelligent based on the available evidence for cognitive dysgenics or that the disrespect involved is not weighty enough to refrain from assigning less weight to their welfare.

An alternative objection acknowledges both that the moral status of future generations is lowered by cognitive dysgenics and that this should lead us to discount their interests, but asserts that the case for longtermism continues to hold because the average moral status of *all our descendants* as opposed to simply those in the foreseeable future is likely to be either broadly equal to or higher than our own. On this view, while the forecasts for our descendants' intelligence levels may be negative for the short- to medium-term, there will come periods during which these levels will rise again and do so to such degrees that the contemporary downward trend will be wholly compensated for, which will most likely be driven by the use of embryo selection and/or gene editing; the emergence of cyborgs; the development of artificial sentience; and/or the return of specific pre-industrial environments that conferred evolutionary advantages on the more intelligent (Clark, 2009; Dutton & Woodley of Menie, 2018; Sarraf et al., 2019).

My rejoinder is that although such reversals might well occur, their occurrence is by no means set in stone. I have already provided reasons for doubting whether embryo selection and gene editing will become widely used to enhance intelligence. In addition, it was noted that the more intelligence we lose, the more difficult it will be to develop artificial sentence and – we might add – morph into cyborgs, which is especially problematic if current dysgenic trends end up triggering a civilizational collapse from which we never recover due to the serious obstacles to re-industrialization, including scarcities of easily accessible fossil fuels, as this would mean that now is our *only chance* to make these technological breakthroughs. Finally, insofar as we revert back to pre-industrial levels of civilization, there seems to be no guarantee that we will undergo the same selection for intelligence that e.g. Europe is thought to have undergone in the centuries preceding its Industrial Revolution (Clark, 2009; Dutton & Woodley of Menie, 2018; Sarraf et al., 2019). For example, if global temperatures end up being significantly higher in the future, then insofar as it is true that cold winters tend to select for intelligence in pre-industrial societies due to the large amounts of planning and cooperation necessary to survive them (Winegard et al., 2020, Section 3), such selection could well be disfavoured. What these and other considerations suggest, then, is that we *should be*

[12] Or, more narrowly, the welfare of those future people with whom no person currently alive will have existential overlap.

taking seriously the possibility that the entirety of our descendants will have a lower average intelligence and therefore a lower average moral status than us, which longtermists have heretofore failed to do.

6. Final remarks

If I am right that cognitive dysgenics poses important challenges to all of longtermism's foundational assumptions, then this raises a question I wish to address in this final section: Why has cognitive dysgenics and its potential moral consequences received so little attention from members of the Effective Altruism movement[13]?[14] For example, the topic is not raised in either Toby Ord's (2020) or Will MacAskill's (2022) influential books on existential risks and longtermism respectively, and even a recent article by Thorstad (2023) that does delve into the implications of demography for longtermism focuses only on how prevailing fertility patterns might affect the quantity of people in the future and not, to put it somewhat crudely, their 'quality'. (This neglect is all the more remarkable when we consider that macro-level declines in intelligence, i.e. quality, do not only reduce the moral status of future generations (see the previous section), but, as discussed in Section 4, also hamper our ability to sustain large numbers of people on this planet, i.e. quantity, by making it more difficult to create and maintain advanced technological and economic infrastructures.).

Although I can only speculate here, my sense is that the failure to engage with cognitive dysgenics and its possible moral consequences is at least partially driven by the offense many individuals take at the notion that some populations are becoming less intelligent as well as at the implication that this is lowering the moral status of their members. Because of this sensitivity – which might be amplified by the fact that the most viable solution to cognitive dysgenics is a taboo-ridden intervention, namely the use of embryo selection for intelligence (cf. Veit et al., 2021) – discussion of this topic ends up being eschewed to prevent potential reputational damage to the Effective Altruist movement.[15] Alternatively, or in addition, there could (simply) be widespread unfamiliarity with the findings of intelligence research, which has become one of the most supressed areas of scholarly inquiry since the 1960s (Carl & Woodley of Menie, 2019; Cofnas, 2016).

Whatever the explanation for the neglect, my hope is that this contribution will encourage longtermists and Effective Altruists more generally to start paying attention to this important type of research or, insofar as they do so already, to start discussing its possible normative import more than they do currently.

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[13] Of which it was noted longtermism is an offshoot.

[14] There are only a few in-depth discussions about it on the Effective Altruism forum, see Rieber (2022); Beck (2022); and Rieber (2014).

[15] If correct, this would be especially problematic considering that this movement has set itself the goal of identifying the most pressing moral causes and that influential voices within it exhort Effective Altruists to adopt a 'scout mindset' (Centre For Effective Altruism, 2024).

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