

Future Human Success: Beyond Techno-Libertarianism

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Abstract

One vision of future human success lies in enhancing our bodies and especially our minds, so that we can achieve new levels of cooperation, morality, and wellbeing. human enhancement, and in particular the argument that enhancement is necessary given how humans evolved as hunter-gatherers and hence are deeply maladapted to the challenges of contemporary environments, such that each individual should be enhanced technologically. I argue that this rationale problematically abstracts away from the role the social and cultural environment has played in human evolution. In particular, enhancement technologies are co-opted even today by competition for status, and when this is taken into consideration, techno-libertarian success seems less appealing. In closing I identify two desiderata for the concept of human success.

Can technology save humanity? The challenges of the Anthropocene and of cosmopolitan living are considerable: what if the path forwards lies in enhancing our bodies and especially our minds? The idea that humans can enhance themselves out of some of the large-scale problems of today may strike some as a futuristic fancy, but it should not be dismissed offhand. After all, technological innovation has, from the very first tool-use, been an integral part of the human evolutionary story and continues to occupy a large role in our collective hopes and dreams for the future. The best hopes for overcoming worldwide pandemics lie in vaccine innovation, those for overcoming paralysis, paraplegia, and other severe disabilities lie in computer-brain interfaces.

Yet, as illustrated by the previous chapters, some of the main challenges in the Anthropocene arise from the basic dynamics of human evolution, and associated increases in eco-evolutionary metrics such as population size or ecological dominance. Is enhancement technology powerful enough to bend the direction of human evolution? The idea that human evolution can and should be controlled is basically as old as the theory of natural selection itself, going back at least to 19th century eugenics, and Francis Galton's pronouncements that it would be "quite practicable to produce a highly gifted race of men by judicious marriages during several consecutive generations." (Galton 1869, p. 1). Today a significant line of thought in enhancement ethics where technology – and human enhancement in particular – is

seen as allowing human evolution to be altered in more desirable directions. In the words of John Harris, enhancement technology would allow us “healthier, longer-lived, and altogether ‘better’ individuals” (Harris 2007, 9). The changes would be on a par with previous evolutionary changes to life-history (see Grove, this volume), and most significantly, enhancement technology also promises to directly enhance our moral psychology – for instance, to broaden our circle of moral concern – and in the process we resolve some of the egotistical tendencies that are impeding enduring resolutions to the, for instance, the problems of sustainability arising in the Anthropocene.

While enhancement ethicists do not formulate their ideas as such, in context of this volume I will argue that a significant contingent of ethicists (Harris 2007; Persson and Savulescu 2012; Bostrom 2014; Sandberg 2014) as well as of public intellectuals (Harari 2017) implicitly operate with a concept of human success that can be called “techno-libertarian success”:

TECHNO-LIBERTARIAN SUCCESS is the realization of maximal individual choice by means of progress in enhancement technology.

Techno-libertarian success illustrates the teleological nature of the concept of success (see Hourdequin in this volume), in the sense that the principle of autonomy grounds what is successful: the individual determines what is success. It is therefore also a very pluralistic concept of success, and could, in principle, refer to anything as long as it is the object of an autonomous wish. One’s own cognitive/athletic performance could subject to enhancement; or the health or talents of one’s own children (e.g. Savulescu 2005; Sandberg 2014). *Any* valued aspect of human life could be the target of enhancement. Does an individual desire intimacy and healthy relationships? This can be enhanced through ‘love drugs’ (Earp 2019). Biodiversity and animal well-being are to be valued? Then human self-centeredness, speciesism, or parochial altruism should be enhanced by targeting human moral cognition (Persson and Savulescu 2012). In fact, even deliberate diminishments of one’s own cognitive capacity would count as ‘success’, as long as it was an autonomous choice (Earp et al. 2014).

In this chapter I introduce a framework by which techno-libertarian success as well as other candidate (future) success concepts can be evaluated: namely, how well they resolve the “problem of human success”. This, in brief, refers to how the problem that, if human success is defined according to eco-evolutionary metrics, it seems both unsustainable and undesirable. Techno-libertarian success *seems* to resolve this, by empowering our autonomy, organizing our life as we see fit, and in the process also enhancing our moral psychology so as to become more caring towards other humans, other species, and ecosystems in general.

This chapter critiques techno-libertarian success (in sections 4 and 5), and argues that, given what we understand of human evolution, it problematically abstracts away from the role that the cultural and social environments play in human psychology and behavior. In particular, if we look at how individuals interact with one of the most important dimensions of the structured social environment – status hierarchies – there seems to be little justification for the type of autonomy that techno-libertarian success needs; moreover, the principle of maximizing human enhancement is compatible with perverse status competitions that leave the community worse-off. Seeking to maximize techno-libertarian success is not necessarily desirable, nor is it necessarily sustainable, and thus it fails to provide a satisfactory response to the problem of human success. Nonetheless, the failure is an instructive one, and while in other work I outline a more positive account (Desmond forthcoming Hastings Center), in the final concluding section I instead suggest two desiderata for concepts of future human success.

1. The Problem of Human Success

The question of what future human success should be understood may seem speculative or futuristic – akin to asking historians to make predictions about where humanity will be in 100 years. However, a more principled treatment can be achieved by focusing on why precisely eco-evolutionary metrics of success are unsatisfactory. For this chapter we will limit the discussion to two important metrics: population size and ecological dominance.

These metrics are quite common when evaluating the evolutionary fate of other species. For instance, general overviews of ant evolution explicitly adopt success-talk: ants are said to be “one of evolution’s great success stories” (Ward 2006) or, alternatively, “arguably the greatest success story in the history of terrestrial metazoa” (Schultz 2000). Even though this success-talk has been transposed to the human species (most recently and notably in Henrich 2016), there are reasons to hold that these eco-evolutionary metrics are not sufficient to define “human success” in any satisfactory fashion. On the one hand, the ecological dominance of the human species is currently paired with unsustainable rates of habitat destruction for other species, and thus it threatens future ecological collapse. On the other, a continued explosive growth in the human population size seems, in a Malthusian fashion, quite compatible with increasing misery. These are hardly the ingredients of a “success story”. In fact, this can even be dubbed the “problem of human success”:

THE PROBLEM OF HUMAN SUCCESS. If success is defined according to the eco-evolutionary metrics of ecological dominance and population size, then human success seems either unsustainable or undesirable, and thus not really a concept of success.

It is not self-evident why eco-evolutionary success should be unsustainable nor undesirable: after all, Thomas Malthus worried about overpopulation, and yet human population has increased about eight-fold since then. Moreover, while increased rates of resource extraction cause pollution and climate change, but they are also what have allowed for the flourishing of human culture in the past 10,000 years. Nonetheless, here is some further argumentation why high-levels of eco-evolutionary success are insufficient to define genuine “human success”.

Current trends in eco-evolutionary success are unsustainable. The prospect of environmental depletion due to human ecological dominance is not new. For instance, during the hegemony of the Roman Empire, large-scale deforestation and extinction of large fauna occurred (Hughes 2014). However, the threatened scale of depletion is today so large humans cannot ignore it in the way they could 2000 years ago. No longer do humans merely dominate their evolutionary rivals (i.e., large predatory mammals that require large habitats), but they also now threaten extinction of species across a wide range of phylogenies (Barnosky et al. 2011). Consumption of other species is not the main cause of this, but rather the destruction of habitats, for instance by converting forests into agricultural land or infrastructure. A recent study found that the appropriation of the net primary production of biomass by humans rose from 13% in 1910 to 25% in 2005 (Krausmann et al. 2013). However, contrary to depictions in the popular media, one should caution against reading threats of imminent collapse in such numbers. Krausmann et al. note that economic output – a measure for efficiency – rose 17-fold between 1910 and 2005, so large increases in biomass appropriation may not be needed in the future to support economic growth. Nonetheless, it is very safe to say that the rate of increase in biomass appropriation is unsustainable.

If one turns to the metric of population size, also here one must conclude the rates of increase are not sustainable indefinitely. Granted, at what point precisely the human population size exceeds the carrying capacity of the environment is notoriously difficult to establish: in the 18th century, Malthus believed collapse was imminent. Nonetheless, also here it is very safe to say that the explosive increase of the past centuries cannot be sustained indefinitely.

The lack of sustainability means that ‘eco-evolutionary success’ is not an entirely consistent notion: when population size or biomass appropriation increase beyond a certain point, those increases imply future *decreases* in population size or biomass appropriation.

Beyond a certain point, increased eco-evolutionary success actually corresponds to human failure. Few would deem an ephemerally dominant but short-lived species an “evolutionary success.”¹ (E.O. Wilson in fact identifies “success” with longevity of a species: Wilson 1990.)

Eco-evolutionary success is not what matters most. Not only do population size and biomass appropriation seem to fail on their own terms, but when applied to the human species they do not seem to what *matters most*. We seem to care for biodiversity and animal welfare for their own sakes – environmental ethics typically represents biodiversity and animal welfare as intrinsic values – and the scenario of future human evolution where the human population size is astronomical and biodiversity all but destroyed, is a staple of dystopian science fiction.

Similarly, in the hypothetical trade-off between global population size and our own flourishing and well-being, we seem to squarely side with the latter. The Parfitian argument illustrates this value judgment: if further increases in the human population size would correlate with the misery of individual humans, then it would be “repugnant” to aim at increasing human population, even if utility calculus would dictate it (Parfit 1984). In fact, the vast growth of a population consisting of valueless individual calls to mind metaphors of parasites or cancers, to which the human species is sometimes compared (Hern 1993).

Perhaps these ethical intuitions are not universal: there are signs that humans once believed having a large number of future descendants was an ethical priority². Perhaps the trade-off then between large population size and other values was not as sharp as it seems to be today. Nonetheless, we can safely assume for the purpose of this chapter that indefinite increases in eco-evolutionary success, defined in terms of population size and ecological dominance, do not capture what humans actually care about.

2. Evaluating Success Concepts: Eugenicist Success

The problem of human success allows one to evaluate a success concept with some systematicity, by means of two questions: Are indefinite increases in the associated metrics of success sustainable? And are indefinite increases desirable? If not, then the success concept does not identify a long-term direction for human evolution.

¹ The sustainability of human success often makes an appearance in perspectives on the future of human evolution. Thus, one could view the implied ecological collapse as an existential risk (Ord 2020). Alternatively, the technologies allowing for ecological dominance may one day spawn a more dominant and hence “more successful” species-like entity, driving humans to some form of collapse (Bostrom 2014; Harari 2017).

² For instance in Genesis 22:17, Jahwe tells Abraham “That in blessing I will bless you, and in multiplying I will multiply your descendants as the stars of the heaven, and as the sand which is upon the seashore.”

As an illustration of such an evaluation, consider the concept of human success that late 19th and early-to-mid 20th century eugenicists implicitly operated with. These eugenicists were worried about how natural selection was disrupted by the improved nutrition and health care of modern societies. The problematic consequence was that those who *would have been* fitter in a “natural” environment no longer outreproduced those who *would have been* less fit, and in particular, the lower socio-economic classes were outreproducing the upper ones. These lower socio-economic classes were believed to be characterized by hereditary traits such as “pauperism”, “feeble-mindedness” or “imbecility” (Kevles 1985, 20–21)³ – and in fact, it was this eugenicist concern with heritability that spurred the biostatistical research that was to become the Modern Synthesis (see Desmond forthcoming for a further exploration of this). In any case, this difference in reproductive output, together with the hereditary nature of their undesirable traits, was believed to be leading to the ‘degradation’ of the human species. Action was needed to stop and reverse this trend. Individuals of “better stock” needed to reproduce at a relatively higher rate. This was the rationale, as is well known, for deliberate artificial selection, by means of anti-miscegenation laws, forcible sterilization, and worse.

The concept of human success implicit in this eugenicist vision of human evolution is a species-level concept. Unlike, as we will see, in techno-libertarian success, where autonomy provides an abstract common metric of success, but where the precise realization in the phenotype is pluralistic, in eugenicist success the metric of success is spelled out in terms of as “intelligence” or “giftedness” or “virtue”. The state of human success then would have been, in the words of Galton, a “highly gifted race of men” (Galton 1869, p. 1).

In its own way, the eugenic concept of human success was a response to a similar problem of human success, where the eco-evolutionary success of humans likewise seemed unsustainable and undesirable. The difference is that the perceived danger then was not ecosystem collapse but rather the outreproducing of ‘high quality’ humans by “low quality” ones. The eugenicists were the progressives of their era: they were critical of hereditary aristocracy⁴, and their main opposition, at least in the U.S., came from religious (Catholic) corners. In this way, eugenics is an illustration about how a certain understanding of the problems associated with human eco-evolutionary success gave rise to a concept of future human success, which in turn was heavily laden with ethical and political implications.

³ Even Darwin, somewhat embarrassingly, spoke of how “the reckless, degraded, and often vicious members of society tend to increase at a quicker rate than the provident and generally virtuous members.” (Darwin 1871, 167)

⁴ For instance, British eugenicists proposed reorganizing the House of Lords along eugenic principles (reported in Kevles 1985, 73)

3. Techno-Libertarian Success and its Evolutionary Rationale

Of main concern to this chapter is what sometimes is termed contemporary “liberal eugenics”, as distinguished from the “population eugenics” of the late 19th and early-to-mid 20th centuries (Agar 2005). Liberal eugenics leverages developments in gene-editing technology and holds that state intervention on human phenotypes or genotypes cannot be justified, but neither can or should the state prohibit individuals from enhancing themselves, as long as they do not harm others in the process. In this way, liberal eugenics typically has a distinctively libertarian flavor (Sparrow 2011): state intervention is strongly eschewed, except to prevent harm to others (e.g., Harris 2007, chapter 5).⁵

The associated success concept is techno-libertarian success: the future success of the human species lies in putting more and more powerful enhancement technologies at the disposal of individuals, so that they can live longer, healthier, and more satisfied lives. In this way, techno-libertarian success seems to offer a relatively straightforward response to the problem of human success. First, it straightforwardly answers the problem of desirability: if one assumes that individuals are the best judge of what they want in life, then by maximizing individual choice individuals can achieve what they desire. Usually this is greater flourishing and/or happiness. In Harari’s view, it will be eternal youth, a permanent state of happiness, and the possession of “super-abilities” (Harari 2017). In Harris’s view, it will be “healthier, longer-lived, and altogether ‘better’” lives (Harris 2007, 9).⁶ At no point would it seem like further increases in these goods would be a bad thing: it seems desirable that techno-libertarian success increase indefinitely.

Second, techno-libertarian success addresses environmental sustainability through cognitive and especially moral enhancement. The underlying idea here is that our self-centeredness and lack of concern for both non-human species and for future generations plays a significant role in the unsustainability of eco-evolutionary success. There is in fact some evidence that this is the case. For instance, habitat destruction correlates with the economic inequality within a country (Mikkelsen, Gonzalez, and Peterson 2007): in other words, the more relative poverty there is in a society, the more willing individuals are to exploit environmental resources to further their economic standing (and, likely, the more willing

⁵ By contrast, utilitarian logic is compatible with strong state intervention. Think of how the Benthamite line of thinking of “everybody to count for one, nobody for more than one” led to new charitable impulses, as well as reforms of public health and public education.

⁶ However, this need not be the case, given the primacy of individual autonomy. Techno-libertarian success can in principle entail sickly, short-lived, and miserable lives, if that is what the autonomous individual wants.

regulators are to turn a blind eye). Hence our self-centeredness and parochial altruism are a prime target for cognitive enhancement technology⁷. In sum, through increased techno-libertarian success, both dimensions of the problem of human success can be resolved.

Techno-libertarian success could be read as a purely ethical notion, as a value judgment of what humans should aim for, affirming the principle of autonomy and indirectly other values such as biodiversity, the well-being of animals, or that of future human generations. However, what is perhaps more fascinating – and problematic – about techno-libertarian success, is how it is closely linked to a narrative of what will happen if we *do not* enhance. There is an evolutionary rationale for techno-libertarian success: without the promoting of enhancement technologies, the current path of human evolution will lead to suboptimal outcomes if not catastrophe.

The basic feature of this evolutionary rationale is a certain view of evolution as such: evolution through natural selection is blind, directionless, and contingent. This view of evolutionary history has deep roots, and in other work I argue that it is problematic I have (Desmond forthcoming), but, operating as it were as a “meme”, the view has been taken up in enhancement ethics, with the implication that our brains and bodies are not designed for the challenges of the Anthropocene, and our maladaptedness is so deep that it needs direct intervention by means of enhancement technology (Harris 2007; Harari 2017; Persson and Savulescu 2012). Our inherited genotypes and phenotypes are barriers to our wellbeing and must be overcome. As an illustration, consider the following:

After all, our brains are products of evolution, which is a blind process that hardly seeks to maximize the good, or make us morally best. Evolution ‘cares’ only about reproductive success. Moreover, even if the evolutionary process somehow led to what is in one sense an optimal result, this result may be optimal only in the environment in which our very distant ancestors lived. It is very unlikely to be optimal in our utterly different modern environment. (There was, for example, no police in the primeval savannas, nor were there planes or hijackers . . .) But if the current level isn’t optimal, and we now have means of improving it (in whichever direction), then surely we have strong reasons to do so – including by biomedical means. (Kahane and Savulescu 2015, p. 138)

⁷ For a more detailed defense of this argument, see chapter 7 in Persson and Savulescu 2012. For a challenge to this view, and a defense of the importance of policy and education in light of human cognitive plasticity, see Buchanan and Powell (2018) as well as their chapter in this volume.

This is the ‘stone-age brains in modern skulls’ logic most readers of this volume will be familiar with (Barkow, Cosmides, and Tooby 1992). It would require a different type of work to ascertain just *how* frequently it pops up in enhancement ethics, but even a superficial review reveals other instances⁸, and perhaps what is most telling: the view is never explicitly argued for, nor is there any discussion of how the view is problematic. Nonetheless, the logic is applied far beyond relatively circumscribed psychological mechanisms like mate preferences or parental care (cf. Buss 2019) but to all aspects of the human phenotype – including feelings of intimacy in long-term relationships (Earp and Savulescu 2020) as well as even our reasoning capacities about what is valuable (Schaefer, Kahane, and Savulescu 2014).

Of itself, the mismatch between inherited phenotypes and modern urbanized and cosmopolitan environments is a scientific hypothesis and need not imply any specific ethical conclusion. The mismatch could be judged to collectivist or totalitarian approach to enhancement, where the state mandates enhancement regardless of individual choice. The mismatch could even judged to be ethically unproblematic, or something that should be tolerated as part of the human condition. Why then is this mismatch emphasized by proponents of libertarian approaches to enhancement ethics? How precisely does this provide an evolutionary rationale for techno-libertarian success?

I believe that the best answer for this question is multifaceted, and that there are some rhetorical reasons involved. The most direct support is that this emphasis on maladaptedness implies what could be called an “individual-centered” view of human evolution: the only units of selection or agents of evolutionary change that are discussed are individuals. That group selection is possible is not denied; it just is ignored and receives no place in the discussion. Contemporary maladaptedness is spelled out in terms of individual properties: our brains not knowing how to deal optimally with evolutionary novelties in our environment, whether the presence of police, planes, or hijackers. In other places, when “well-being” – one of things techno-libertarian success promises to maximize – is defined, it is defined in terms of individual properties, as a “state of an [*individual*] person’s biology or psychology” (Savulescu, Sandberg, and Kahane 2014b, 7; my emphasis). Lack of well-being is thus

⁸ For direct quotes, consider for instance, Bostrom and Ord 2006, p. 665-666: “... our current environment is in many respects very different from that of our evolutionary ancestors ... [and] places very different demands on cognitive functioning than did an illiterate life on the savanna”. Or alternatively, Pugh, Kahane, and Savulescu 2016, p. 407: “.. the relatively contingent and arbitrary features of human nature, selected as they were blind evolutionary processes...”

understood as a person’s body or mind being suboptimal. This diagnosis of the problem implies – with rhetorical even if not with deductive necessity – that the resolution must lie in enhancing individual properties. Individuals are responsible for their own well-being, and thus should take their own fate into their hands, and enhance themselves if that is how they wish to conduct their Millian “experiment in living”. Our evolved biology and psychology is, perhaps not always but often enough, a barrier to be overcome in the pursuit of well-being.

Part of the effect of this rationale is to undermine rival social liberal approaches to enhancement ethics, where the importance of policy and/or education are emphasized.⁹ By emphasizing humans’ deep maladaptedness, and by drawing on evolutionary psychology’s conclusions that many of our cognitive mechanisms (whether regarding mate preferences, sexual taboos, or parental care) are universal across cultures and thus innate, doubt is cast whether policy and education are powerful enough to overcome our inherited limitations, especially with regards to our tribal moral psychology. Thus, interestingly, techno-libertarian success seems to depend on some implicit understanding of human nature: namely that it is ‘human nature’ to be maladaptive to such an extent they can only be meliorated by means of technological phenotypic or genotypic interventions (see Kaebnick 2014 for how the concept “nature” is difficult to eliminate entirely).

Moreover, and this is emphasized in (Harris 2007), enhancement technologies have always been central to hominin evolution. If any human behavior could be termed “natural”, then it would be our propensity for enhancing ourselves. For instance, the invention of fire can be considered an “enhancement” insofar it increases human capacities to control the state of food, and the control of fire has been argued to be crucial for human evo-evolutionary success, since cooking allowed for a more efficient extraction of nutrients and hence for the support of energetically expensive brains (Wrangham 2010; see also Grove, this volume). Similarly, stone technologies (Oldowan/Achulean) allowed for more efficient hunting, and hence increased appropriation of the biomass production in ecosystems. If one adopts an evolutionary perspective, humans appear to be enterprising, autonomous individuals.

A final consideration why techno-libertarians emphasize the purported deep mismatch between humans and their environments today – and this consideration is the most difficult to pin down, yet arguably plays a large role in shaping enhancement ethics – is that it positions techno-libertarianism as a “progressive” approach, in the sense that techno-libertarians

⁹ For examples of views of future human evolution that emphasize the importance of coordinated action (through policy) and of the transmission of information and values (through education), see Ord (2020) or Buchanan and Powell (2018).

champion change and seek to overcome the status quo. Add to this the fact that many cautionary approaches to enhancement used language that was perceived as religious, such as such as respect for givenness or the sacredness of life (Kass 2003; Sandel 2007), and one can add to this that the evolutionary rationale for techno-libertarian success allows the latter to be portrayed as championing science (versus religion).

Here it is instructive to point out the similarities with the old eugenics, which was also portrayed as a progressive movement to overcome is human obscurantism and/or irrationality.

Compare:

“what Nature does blindly, slowly, and ruthlessly, man may do providently, quickly, and kindly” (Galton 1909, 42)

with:

This possibility of a new phase of evolution in which Darwinian evolution, by natural selection, will be replaced by a *deliberately* chosen process of selection... (Harris 2007, 3–4)

Both quotes evince a dichotomous understanding of human evolution: a “natural” part where human evolution is driven by blind and chancy natural selection, and a “rational” part, where humans intentionally shape their own evolutionary destiny in the image of moral values. Enhancement technology thus represents nothing less but a new era in human evolution – one can see the presence of Enlightenment views of human progress here.

Moreover, there are similar approaches to the psychology of those expressing caution towards intervening on human evolution. In the words of Ordoover, “Eugenics meant, to its proponents, the victory of rationality over shortsighted altruism, (...) science over sentimentalism.” (Ordoover 2003, 53). Similarly, techno-libertarian thinkers have recast such arguments as irrational aversions caused by cognitive biases (Bostrom and Ord 2006; Caviola et al. 2014).

In sum, techno-libertarian success seems to identify measure where indefinite increases seem both sustainable and desirable, and it is supported by an evolutionary rationale. This rationale puts the desirability of techno-libertarian success in stronger relief: humans are deeply maladapted to the current challenges of the Anthropocene, and hence the need for enhancement technologies is proportionally stronger. Moreover, the rationale provides indirect cover for techno-libertarian success by undermining those who are skeptical or cautious about enhancement: they either suffer from cognitive biases, are ideological, or underestimate just

how recalcitrant many of our maladaptive inherited cognitive mechanisms actually are to the effects of education or policy.

4. Liberty and Status Competition

Does techno-libertarian success present a coherent vision? Is this what future human success could (or should) look like: putting ever more powerful enhancement technologies at the disposal of individuals, so that they can use them to maximize their well-being as they see fit? This section will look more closely at the evolutionary rationale, and will argue that it unravels when we take into consideration how social and cultural environments both influence humans and are affected by their actions.

The ‘stone-age brains in modern skulls’ logic that techno-libertarianism relies on has its strengths – for instance, it helps to explain why many sexual, mating, parenting, and kinship behaviors seem cross-cultural and recalcitrant to changes in the social environment (Buss 2019) – but as a sweeping view of human evolution, it is quite limited. The very concept of a single type of ancestral environment that has characterized the majority of human evolution is suspect (e.g., Foley 2005); more importantly, many aspects of human cognition are highly influenceable by social learning and thus are very adaptable to the cultural environment (Boyd and Richerson 1985; Henrich and Boyd 1998). Humans respond to social norms, whether status norms or sexual norms, and in fact, sensitivity to norms seems to be hard-wired via various cognitive biases, such as the conformity bias (Baron, Vandello, and Brunzman 1996) which is adaptive whenever social learning is adaptive (Henrich and Boyd 1998). Thus, when human phenotypes are viewed as primarily shaped by natural selection in the ancestral environment, this ignores the role played by changing social structures. What happens to techno-libertarian success – the maximization of individual choice through technological means – when social structure is taken into consideration?

Let us return to the quote by Kahane and Savulescu, where, as examples of evolutionary novelties in the environment, they gave police, planes, and hijackers. A first difficulty here is deciding whether a change constitutes an evolutionary novelty. For instance, regarding police: obviously there were no persons going around enforcing social norms while wearing bowler hats. But the function of enforcing social norms is hardly a novelty, and in fact, many view enforcement as a necessary counterpart to the spread of altruistic social norms (see e.g. Tomasello 2016). Planes may perhaps with some justification be considered evolutionary

novelties, but then the further question arises: do evolutionary novelties always warrant cognitive enhancement?

If we look at the history of technology, and in particular, at how people sometimes panicked at technological change, we obtain a different perspective on contemporary claims of deep maladaptedness. For instance, rather amusingly, the advent of train travel in 1860s and 1870s Victorian England meant that suddenly people could travel at a multiple of speeds of what were previously possible – and this led to a widespread moral panic (documented in e.g. Milne-Smith 2016). Newspapers regularly reported on how otherwise healthy individuals were driven to insanity by rail travel, or of how some suddenly turning violent without reason. Doctors took to warning that the human body and mind were not made for the intense vibrations and unnatural speed of rail travel (Milne-Smith 2016, 21). Even though we will not further pursue this here, this raises the question to what extent the championing of enhancement technology to upgrade our brain is actually – and paradoxically – a classic form of panic at technological progress. Today unprecedented speed is no longer the great fear, but rather unprecedented advances in computing and artificial intelligence (see Bostrom 2014 for an overview).

To examine just how ambiguous enhancements are with regard to individual autonomy, let us consider one of the most primeval but psychologically powerful enhancements: enhancing the length of one's body. Sometimes children are short but without any particular pathology causing the short stature (e.g. hormone deficiencies or insensitivities): this condition is known as 'idiopathic short stature' or ISS (Argente 2016). ISS can be addressed through biomedical enhancement: a child with ISS can achieve a greater adult height if given human growth hormone (hGH or somatotropin). Is ISS a disability? There are no physical health risks involved; yet, short stature is sometimes viewed as a psychosocial disability by the parents of the child (see Allen 2017, p. 146), and moreover, the child may experience it as a psychological burden (Ranke 2013). As a treatment, hGH therapy seems to be safe within a time-span of 10 years (longer-term safety is still being explored), and to qualify for treatment according to FDA regulations, the child must be in the approximately 1st percentile for height (or more precisely, 2.25 standard deviations shorter than the average height: Ranke 2013, 330).

Why is ISS intuitively experienced as a disability by many of those involved? If we leave the medical-ethical context, and approach height from the perspective of the evolution of status, then one sees that physical height (and, in general, physical formidability) is one of the most widespread indicators of dominance across animal species (together with strength and aggression: Ellis 1994; 1995). Also in human status hierarchies, height still plays a surprising

role. Psychology studies have showed how taller people are viewed as superior in leadership and intelligence, and taller males in particular are viewed as healthier and more dominant than shorter males (van Vugt and Tybur 2015; Blaker et al. 2013). Height correlates with income, the likelihood of having a managerial position, and military rank (see Blaker et al. 2013 and references therein). While it is important not to overestimate the effect sizes (i.e., many other factors predict income, such as education), nonetheless, this context makes it more understandable why parents view short stature as a disability.

Techno-libertarian success would dictate that hGH therapies should be made available to all, and that these would only allow the parents and children to better pursue their wellbeing. Since nobody other than the child could potentially be directly harmed by height enhancement, there are no grounds to categorically prevent a parent from enhancing the child (assuming here, for simplicity, that parental consent can stand in for the child's consent). Moreover, this argument could be supplemented by a utilitarian calculus that would come to the conclusion that, given the harm caused to the child by not enhancing (in terms of respect by others, or in terms of life-time earnings), parents even have a *duty* to administer human growth hormone to their child (for this type of argument, see Savulescu 2005).

The problem here for techno-libertarian success is that the prospect of individuals feverishly enhancing their height in order to escape discrimination is not the paradigm of genuinely free choice – even though the choice may maximize utility given the circumstances. A libertarian would deem that, in this circumstance, the social-cultural environment represents some kind of “tyranny” reducing the free choice of individuals: if parents did not have the sword of lifelong discrimination hanging over their heads, they would be in a better position to decide freely. However, and this is what I will more explicitly argue, this type of “tyranny”, whereby our decision-making is strongly influenced by status hierarchies, is omnipresent and cannot be avoided.

Sometimes social status is discussed in enhancement ethics as a positional good, and that drives to enhance can create inequality (Mehlman and Botkin 1998) or perverse competitions (Sparrow 2019). However, the typical response is to point out how many competitions are beneficial for the community (e.g. Anomaly 2020, 11–13), and this is true: status competition *can* be beneficial for the community, as long as individuals compete for the types of status that also entail benefits to the community (e.g., the status that results from excellence or a service rendered to the community). The issue is that techno-libertarianism does not present a coherent vision: it gives no criteria for what are beneficial and what are perverse competitions, beyond stating that “no harm” should befall others. *How* is one to

regulate the competition? The vision of techno-libertarianism is simply to put ever more powerful enhancement technologies at the disposal of individuals: thus the response would be to enhance individuals such that they become prosocial and community-oriented (argued in e.g. Persson and Savulescu 2012). We will come back to this in the next section. For now I want to deepen the link between status and enhancement, and argue how this shows how our decision-making about enhancement is intertwined with the social environment.

It is difficult to overstate the importance of status for human psychology and for life outcomes. A recent review found the desire for status to be of fundamental importance for people across cultures, genders, ages, and personalities (Anderson, Hildreth, and Howland 2015). Status impacts: subjective well-being, self-esteem, and mental and physical health (Anderson, Hildreth, and Howland 2015). Conversely, people with lower status, whether through wealth or education, have higher levels of stress (Thoits 2010), less experience of control over their lives (Ross and Wu 1995), and higher rates of mortality from all causes (Wilkinson 2001; Marmot 2005). Status is thus at the nexus of all sorts of other desirable goods. It is kind of a “gatekeeper good”: achieve status, and all sorts of benefits will follow, but the gate towards status is narrow and competitive.

Any ethologist would not be surprised at the apparent importance of status: status hierarchies are found across animal species (Ellis 1995). Moreover, bias towards high-status individuals seems part of our evolved psychology. Humans – even toddlers – can work out who are the high-status individuals, and they proceed by giving them a disproportionate chunk of their attention (Atkisson, O’Brien, and Mesoudi 2012; Chudek et al. 2012).

Enhancements are – per definition – interventions to increase human capacities, so if one considers “why” one would be motivated to enhance, it does not take many steps to suspect that status-related reasons may play a large role. They *need* not play a large role. In principle, individuals could be highly motivated to enhance their ear-wiggling capacity – just to pick out one trivial-seeming trait. This would presumably be an expression of genuine liberty, since ear-wiggling capacity has no status-related benefits. Imagine, though, a possible world where the people have been captivated by some irrational fashion trend, where those with superior ear-wiggling capacity were admired and lauded. Suddenly it becomes easier to understand why, in that world, individuals would go through all sorts of effort, at great cost, in order to enhance their ear-wiggling capacity.

Athletes seek enhancements that need to be increasingly elaborately administered (to avoid detection): what are their motivations? At a first level, they are enhancing in order to improve their athletic performance. But is the latter sufficient to explain the intensity of their

motivation? In one of the few studies on the incentives of athletes to use doping (Kegelaers et al. 2018), athletes first state motivations pertaining to athletic performance, but then they start listing motivations related to improving social status: their image, respect from others, greater popularity among friends, obtaining what Kegelaers et al. call “hero status”, and finally, financial gains. It is doubtful there would be the same incentive to enhance if the status rewards of athletic success, both financial and in terms of respect and recognition, would not be so great.

Cognitive enhancement is often seen as intrinsically beneficial: cognitive abilities can be used for good, and hence there is no point at which further increases in cognitive ability cease to be beneficial. Yet also here, the motivations for cognitive enhancement seem closely related to status. Consider educational credentials, perhaps the single most important means to gain access to socioeconomic status, since they allow entry into high-status professions (medicine, law, engineering, etc.). Pharmaceutical enhancements (Adderall, Ritalin, etc.) are relatively often used by students in an educational setting (Ragan et al. 2013): would they do this if their educational outcomes did not determine their future in the way it does? According to a strict application of the techno-libertarian concept of success, also permanent diminishments of cognitive capacities could count as “success”, as long as they increased wellbeing by satisfying preferences (Earp et al. 2014). However, given the close link between cognitive capacity and status gains, and given how human psychology is oriented to status, it can be doubted whether such diminishment would occur with much frequency.

In this way, the general rationale that decisions to enhance are strongly influenced by status-related reasons seems to hold up when we consider various types of enhancement. How well it holds up is another issue. It would seem safe to say that health-related interventions are not undertaken for status-related reasons – however, those interventions would ordinarily be called “therapy” rather than “enhancement”. Cosmetic enhancements are a difficult case. Individuals may ostensibly undergo cosmetic enhancement for esthetic reasons alone; however, very often status-related reasons are at play as well. One study of the motivations of males to anabolic steroids to enhance their muscle mass reported “enhanced confidence” being an important reason (Wright, Grogan, and Hunter 2000). But why should being large give more confidence in oneself? According to basic evolutionary psychology, physical formidability is linked to perceived dominance status (Buss 2019). Similarly, beauty ideals, especially for women, can give rise to intense peer pressure, where those individuals who realize those ideals receive status (attention, respect, opportunities, and so on). This is most evident in school settings, where beauty ideals seem to feed patterns of bullying (Thornberg 2018). Thus, while

yet some other forms of enhancement (e.g. enhancement of love or relationships) may not be related to status, at least many of the most important forms of enhancement are status-related.

What should we take away from all of this? First, techno-libertarian success does not reflect how individuals are entangled with their social environments. The libertarian ideal of negative liberty (freedom from coercion) is not of much help when decision-making is strongly influenced by status hierarchies – as seems to be the case with many (and perhaps all) decisions to enhance. Not only are we strongly influenced by the social-cultural environment, but actions that only seem to affect our own phenotypes can strongly affect others – thus violating the “no harm” condition. Everyone who chooses “freely” to enhance one’s height only causes others to fall into the first percentile of height. Everyone who “freely chooses” to consume Ritalin and Adderall in order to win the credentials needed to conquer limited positions of professional prestige, only prevents someone else from being able to occupy those positions.

One consequence of the role of the cultural-social environment in human evolved psychology is that the evolutionary rationale for techno-libertarian success, which so emphasizes the mismatch between individual and environment, is undermined. Apparent maladaptedness can occur when an individual cannot function well in a given social environment, but sometimes the problem lies in the environment. The history of mental illnesses provide a plethora of examples: homosexuality (listed in early editions of the DSM), or “drapetomania”, a type of madness ascribed to slaves with an “urge... to run away to freedom” (De Young 2010, 31). To prescribe “enhancement” in these cases would, of course, be dismal – even though pharmaceutical interventions are thinkable that would improve wellbeing given the social environment.

This consideration casts the limitations of techno-libertarian success in sharp relief. The prospect of ever more powerful enhancement technologies to better produce wellbeing through realization of preferences is not always desirable: not only could this lead to perverse status competitions, but also to forms of oppression. The libertarian would of course reject the latter cases as not genuine forms of techno-libertarian success, but then the question becomes: how to distinguish the genuine from the mere apparent? It is clear that that enhancing individual capacities is only part of the story; altering the social-cultural environment must be other, but the techno-libertarian conception of success offers no resources to represent this dimension of human success.

The problem here is not that mismatches between contemporary and ancestral environments cannot exist. Sometimes maladaptedness is really due to such mismatches. Substance abuse or obesity are hypothesized to be due to such mismatches (i.e., humans did

not evolve in settings with an abundance of sugary and fatty foods), even though this remains controversial (see Syme and Hagen 2020, 107). Also some mental conditions, such as ADHD, are hypothesized to be due to a mismatch between highly structured contemporary environments and individuals who evolved in relatively unstructured ones (Syme and Hagen 2020). But many apparent forms of maladaptedness may be due to the social-cultural environment. Moreover, conditions such as depression may be normal, aversive reactions to traumatic events (Syme and Hagen 2020); however, the social-cultural environment for low status individuals is much more stressful and traumatic than it is for high-status individuals. This is, in fact, viewed as one of the causal factors (together with lifestyle choices) as to why individuals with low socio-economic status have more problems with mental health (cf. Marmot 2005; Anderson, Hildreth, and Howland 2015). Prescribing enhancement, once again, does not seem to be the right response at all, when the antecedent problems may lie in family history or lack of opportunities for flourishing. Some would maintain that providing biomedical enhancements to the underprivileged can help address this type of inequality (e.g. Harris 2007); others no doubt would be quick to point out that this is just another form of “biopolitics” and pharmaceutically-enabled oppression. There is no Foucauldian turn in this chapter, but one need not go so far in order to acknowledge that apparent maladaptedness of individuals does not always justify an enhancement of individual capacities. The implication is not that the enhancement ethicists targeted in this chapter would disagree with the latter statement – they would surely would agree that maladaptedness sometimes justifies changes to the social-cultural environment – the problem, however, is that the techno-libertarian conceptual framework together with its evolutionary rationale leaves no space for reaching such conclusions in a way that is not ad-hoc. There are strong evolutionary reasons to take the state of the social-cultural environment into consideration for a satisfactory concept of human success, and this is not something that techno-libertarianism does.

5. Technological solutions to status competition?

There are two paths the techno-libertarian could take to rescue their implicit concept of success. After all, one of the strengths of techno-libertarian success is its pluralism: as previously mentioned, *any* valued property P can be enhanced. In the ethics literature this has allowed previous objections which pointed decreased “humility” or “appreciation of giftedness” (Sandel 2007) to be parried: “humility” and “appreciation of giftedness” are themselves

experiences that could be the target of cognitive enhancement (see Roache and Savulescu 2016 for this argument). So if techno-libertarian success is criticized as undesirable due to some property P, then the response is “enhance P”. So, if techno-libertarian success is criticized because it can lead to perverse status competitions, the techno-libertarian can simply respond “enhance the cognitive mechanisms to ensure prosocial attitudes”. Alternatively, if techno-libertarian success is criticized for implying that the individual must adapt to a wayward social-cultural environment, then the techno-libertarian can simply respond “enhance the cognitive mechanisms of those in charge to ensure desirable social-cultural environments”.

Let us add some detail and plausibility to this objection. A unique dimension of human status hierarchies is that there are characterized by what has been termed ‘prestige’ rather than dominance (Henrich and Gil-White 2001). Dominance indicates which individual would be the victor in a direct, physical confrontation; prestige indicates some kind of competence or excellence. Assigning prestige involves individuals freely conferring status without any threat of force. Moreover, given how humans are biased towards learning from high-status individuals (Atkisson, O’Brien, and Mesoudi 2012), organizing status hierarchies according to prestige benefits social learning and cumulative culture – core elements of human evolutionary success (see Demps and Richerson in this volume).

This distinction between dominance and prestige gives some more detail as to what an “enhancement” of status competition would look like: it would enforce adherence to what some anthropologists call “service-for-prestige” norms (Price and Van Vugt 2014). High-status individuals are expected to act in the group’s interests, and hence competitions for prestige are more beneficial for the group over the long-term than competition for dominance. Thus, the techno-libertarian could propose the promotion of biomedical enhancement would target the moral cognition of high-status persons by increasing their prosocial tendencies towards offering service to the group (in exchange for whatever status they may receive). Enhancement seems to “solve” one of the core limitations of techno-libertarian success.

The response to this objection lies in the further question: *who* should decide on this moral enhancement? After all, some group of “guardians”, with a deep understanding of social dynamics, would need to be making the decisions which high-status individuals are the least likely to remain prosocial and to what extent their moral psychology would need to be enhanced. This represents the first step towards an infinite regress, since these “guardians” would have an even higher status, and thus how could one ensure their prosocial attitudes? These could be morally enhanced by second-order guardians, but at some point there would need be an agent who acts autonomously rather than being causally manipulated by

enhancement technologies. Moreover, in the effort of techno-libertarian success to engineer benign status competition, the core libertarian tenet that individuals should conduct their lives as they see fit is severely compromised – and even if we end up with benign status competition, it is no longer a form of *libertarian* success.

Could status competition be removed through technological progress? If humans could simply lead their lives and not be motivated, nor constrained by status hierarchies: would this not be a preferential state of affairs? Yet this objection must be parried, because status hierarchies are not something that can be engineered away. Status hierarchies evolved in order to streamline group-level decision-making procedures concerning individual access to scarce resources such as mates, food, or shelter (see e.g. van Vugt and Tybur 2015). In other words, without a status hierarchy, then conflicts determine who gets what, and such conflicts leave every individual worse off. A group of hens with a pecking order will be better off than a group of hens where each feeding session provokes conflict about who gets what. A group of humans where collective decisions are made about who gets nice houses, good education, interesting jobs etc. will do better than a group where these issues are decided through physical fights. In fact, the principles that decide status hierarchies would, in a different context, be referred to as a “principle of justice” (Rawls [1971] 1999). In this way, status at its most fundamental determines which organism’s needs are prioritized, and avoids violent conflict over scarce resources.

Perhaps technological progress can alleviate most scarcity. Housing quality seems like something that could be “solved”. Perhaps unrewarding lines of work could also be “solved” by advances in artificial intelligence so that computers and robots take over all drudgery. Yet there is one scarce resource that technological progress cannot possibly alleviate: who gets to decide. In a group of at least three people deciding between three options, some “dictatorship” is needed to avoid impasse, where one individual’s preferences weighs more on the collective decision (this is a very rough formulation of Arrow’s theorem: see Morreau 2019). It is not a coincidence that most institutions (whether corporations, governments, or charities) have ‘leaders’: individuals whose preferences are decisive for the collective, at least with regard to certain types of activity or subject matter. Assuming that individuals will not cease to desire to realize their preferences (an assumption that is essential to the concept of ‘preference’), then competition for leadership positions will not cease regardless of how much technological enhancement will occur.

In sum, benign status competition cannot be engineered through further enhancement: enhancing someone else to guarantee their adherence to “service-for-prestige” norms is not

only inherently problematic (as a form of slavery), but goes against core libertarian tenets. Moreover, failing that, status competition cannot be engineered *away* either. It is here to stay, and human success concepts must take this into consideration.¹⁰

6. Conclusion: Desiderata for Human Success

This chapter drew attention to how cultural evolutionary theory teaches us how individuals are embedded in their communities, and are not only highly dependent on them for basic survival, but also make core life choices in light of the social-cultural environment in their community. The chapter especially focused on the role that status hierarchies and status competition – central components of any social-cultural environment – play in forming individual choices. Enhancement technologies merely alter or even intensify existing status competitions, but cannot remove them. Because individuals actively adapt to social-cultural environments the evolutionary rationale for techno-libertarian success (i.e., the deep flaws of inherited human genotypes and phenotypes) is likely overestimated. Moreover, because some cases call for change in the social-cultural environment instead of individual capacities, the very desirability of techno-libertarian success is undermined.

The failure of techno-libertarian success is instructive, however, and suggests two desiderata for satisfactory concepts of future human success. First, concepts of human success should integrate metrics at the level the community and the cultural environment. Eco-evolutionary success integrates only species-level metrics (population size; ecological dominance) while techno-libertarian success only individual-level metrics (individual choice). The basic fact of how individuals are embeddedness in communities means that the choice between the good of the individual and the good of the community is a false one: the desires of individuals are very often oriented towards the good of the community, and the community is organized as to contribute to the development and well-being of its members (e.g. through social learning, or division of labor). This means that a satisfactory concept of “human success” would need to refer to dimensions of “successful communities”, for instance those with cultural environments where the flow of social learning is optimized. One specific metric could be the degree to which high status is accorded to individuals who have benefited the group the most, or who have the potential to benefit the group the most (via their competence or excellence).

¹⁰ Unless all decisions at some point would be taken by artificial intelligence (something Harari defends in his idea of “Dataism”), but that would not only mean jettisoning techno-libertarian success altogether, but also the principle of autonomy and liberalism as such.

Second, given the inevitability of status hierarchies and status competitions, at least one community-level metric should concern how status is organized. For instance, status can be attributed to actions that promote long-term interests rather than short-term ones. In such a concept of human success, human enhancement would be subordinated to the good of the community. Somewhat paradoxically, this would entail social norms that discourage individuals to pursue status-maximization for its own sake: status and its various correlates (wealth, fame, recognition) are afterthoughts but not the primary values. This is why promotions of status competition for its own sake, present in some corners of enhancement ethics (Anomaly 2020), likely evince a too uncritical trust in the invisible hand taking care of the long-term interests of the community. Instead, primary value would then be accorded to various forms of service to the community. Such service could be understood as contributions to the health of ecosystems (important for communities in the long-run), and in this way, the desideratum that human success be community-focused would help address the sustainability dimension of the problem of human success.

In sum, even though techno-libertarian success influences a lot of contemporary thinking about the future of human success, it is not well supported by what we understand from cultural-evolutionary theory about human evolution. This theory, among other things, points to the role of status competition, and how humans both actively adapt to it and are constrained by it. Future human success would need to identify successful forms of status competition, and in general, would need to identify dimensions of what it means to be a ‘successful community’.

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