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Genetic Engineering Against Neuro-Normativity!

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that desire them. It is with these fears of domination and ethical dilemmas that we engage bravely but also with appropriate reticence with shaping the river of life.

In the final scenes of the Twilight Zone episode mentioned in the introduction, Marilyn, the main character who sought to resist the pressures to upgrade into subdued normativity, is tricked into receiving the treatment. She emerges looking exactly like her best friend but with a different name tag. All of her fire and complex thought seems to have vanished into a sort of 'popular girl delight'. She seems to remember nothing of her concern or illicit ideas. Her anguish, as a form of resistance, is gone. There is something to be said of this final scene in regards to the meaning behind our experiences of neurological diversity. Depression for one, may be the bane of their existence, pushing them ever deeper into needless suffering, and yet for another it may feel as though it is an appropriate response to a world gone to shit, wherein losing their depression would feel like losing their reality. Compulsory happiness is itself a method of control and coercion. Therefore, the integral piece is abundance of options and the morphological freedom to consent meaningfully in the process of engagement with these choices. Even if this can be said in a sentence, it is vastly complex as it spells out in a wide variety of cases. It is therefore the duty of intellectual vigilance and a firm grasp of ethics that these ventures may be correctly explored. Anarchism and its emphasis on decentralization, autonomy, freedom, mitigation of unnecessary harm, and resistance to authority provide a strong foundation upon which to build networks of neurodiverse interaction amongst those who opt for a variety of genetic alterations and those who do not.

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In 1964, a subversive yet deeply racist episode of, "The Twilight Zone" first aired called "Number 12 Looks Like You" in which "Number 12" refers to a design of normative beauty towards which the young and "homely" Marilyn was expected to upgrade her appearance through a variety of surgeries. Everyone chooses one of these few designs to be their appearance and then wears name tags to distinguish themselves from each other. She begins to express explicit resistance to the process, eventually disclosing that her father, who had read banned books, had influenced her into questioning the uniformity of it all. Her family and friends try to convince her using many methods of manipulation. They eventually take her to a laboratory where they assure her that no one will ever force her to undergo the transformation but insist that with greater pressure, she will "realize" it's what she truly wants. She eventually breaks down and screams, "Being like everybody, isn't that the same as being no one at all?!" as she begins to realize that in addition to appearance, everyone has also had their personalities modified and made uniform. Her resistance to the process of forced normalization is seen in her tears. She cries in the ways that the "upgraded" humans cannot. Hers is an anti-normativity that is valiant, even as it is framed in a dystopic technophobia worthy of critique.

What this dystopia does not recognize, is both morphological freedom and the infinite diversity of potential upgrades. Her consent is coerced and her choices are limited. Had she had the opportunity to, with informed consent and full agency, be a chartreuse transsexual lizard queen amongst unfathomable arrays of personalized options, she would likely have experimented more freely. There's a character named, Sigmund Friend who tries to convince her of the errors of her sick mind and essentially explained how this hegemonic uniformity was created in order to solve the social problems of inequality. Anarchism shows us that equality need not be hegemony. Hegemony is in fact a false equality because it depends on the re-

pression of difference. The complexity of diversity in network connections is the strongest form of horizontalism, and as such it should be the goal of anarcho-transhumanisms.

In many ways we face a similar dilemma now as genetic engineering is met with resistance to the very real history of eugenics. The reactionaries of this view tend to overlook the potential benefits of a wide array of radical uses for genome editing that are horizontal yet diverse; striving towards an equity that is not hegemonic but rather, exceptionally internally complex with intricate webs of social connectedness created through decentralized autonomy and technological advances in agency. Discoveries such as those surrounding CRISPR technologies in synthetic biology (a method for altering gene sequences) and pre-natal screening, lend extensions to the horizons of our collective imagination. CRISPR, although more well known, is but one of the many frontiers of gene editing technologies. Cox, Platt, and Zhang (“Therapeutic Genome Editing”, 2015) review some of the various usages of gene editing and add that, “To date, four major classes of nucleases, meganucleases and their derivatives, zinc finger nucleases (ZFNs), transcription activator like effector nucleases (TALENs), and CRISPR-associated nuclease Cas9 have been developed to enable site-specific genome editing.” These tools offer expanded avenues for disease reduction and genome augmentation which can be seen as areas fertile for resistance and new attack surfaces to the hackers of both life and technology. But at the same time, these discoveries also advance forms of potential governance and domination. It is for this reason that those of us who are so inclined, should utilize, push, and appropriate these burgeoning technologies in order better weaponize and optimize our neuro-divergences in order to both, decrease meaningless suffering and increase our agency. Basically, we should use genetics to make ourselves weirder.

Torrent all the science. Appropriate the state technology. Reverse engineer. Experiment. Hack yourself weirdly.

sidered impossible, editing a mature neuron column or genetic sequence. As these technologies advance, the base genetics you’ve been given at birth could become little more than a suggestion as we shape ourselves into the beings that we wish to be. This would lessen the ethical dilemmas of genetic material donors deciding pre-birth what their child should be like. As we advance into editing our brains, the possibilities abound. We can choose to diverge or assimilate in ways that we find meaningful or useful in order to expand our agency and degrees of freedom and as a radical act of autonomy.

Reticence and Resistance

All of these technologies of gene editing have, in equal or greater measure, the power to be utilized as tools in domination. In his 1962 speech entitled, “The Ultimate Revolution” Aldous Huxley famously remarked,

“There will be, in the next generation or so, a pharmacological method of making people love their servitude, and producing dictatorship without tears, so to speak, producing a kind of painless concentration camp for entire societies, so that people will in fact have their liberties taken away from them, but will rather enjoy it, because they will be distracted from any desire to rebel by propaganda or brainwashing, or brainwashing enhanced by pharmacological methods. And this seems to be the final revolution”

This quote was a prescient foreshadowing of much that has come to pass and yet other phenomena likely upstream. All of these gene-editing techniques of augmentation or alteration will of course be subsidized and controlled, especially in the U.S. by the military-industrial complex and corporate monopolies protected and sustained by statist intervention. As anarcho-transhumanists, it is our duty to liberate these technologies such that they may be utilized radically and accessibly to all

laboratory womb. As long as that cluster of cells is not yet autonomous or conscious, the carrier has the right to edit it as an extension of their own morphological freedom. This should of course be done with reasonable deference towards what the potential life would most likely vye for itself. However, zygote editing or early abortions are not the only frontiers for genetic engineering that could be turned towards a radical purpose of divergence.

An interesting forefront is the ongoing revelations surrounding optogenetics which is a system for controlling cells with light. Optogenetics focuses especially on neurons and can even teach optogenetic cells to glow according to specific conditions, triggering a real-time feedback loop. Substances can be taken in a pill form that activate these processes and last up to several days. They are even teaching the trained cells to be able to then train other cells in turn, in order to continue the work of the substance post half-life. Researchers at Brown University, are currently exploring the possibilities in regards to epilepsy wherein, “BL-OG [bioluminescent opto-genetics] -enabled neurons in the brain could be programmed to glow red (like a traffic light) if calcium ions are surging in too quickly. That red glow could trigger neighboring optogenetic cells to dampen their excitation amid the calcium buildup, effectively stopping a seizure as soon as it starts.” One of the most remarkable aspects of BL-OG is the precision with which it is capable of functioning. No doubt, as this technology advances, bio-hackable versions could be created that could potentially help with everything from, breaking away from a memetic virus and/or bad habit such as addictions or PTSD loops to treating Parkinson’s disease and diabetes. The bio-hacker experiments can continue to be open source published such as was done with the night vision eye drops created by the folks at Science For the Masses or outlined in the book “Biohackers: The Politics of an Open Science” by Alessandro Delfanti. The BL-OG work is just one example of a plethora of fields attempting to do the once con-

Morphological Freedom

Although many will be familiar with the essay entitled “Morphological Freedom: Why We Not Just Want It, But Need It” by Anders Sandberg I still think it’s useful to touch upon first. Morphological freedom is effectively summarized as follows,

“Morphological freedom can of course be viewed as a subset of the right to one’s body. But it goes beyond the idea of merely passively maintaining the body as it is and exploiting its inherent potential. Instead it affirms that we can extend or change our potential through various means. It is strongly linked to ideas of self ownership and self direction.”

Morphological freedom is the essential link between anarchism and transhumanism that turns transhumanism from a weapon of domination to a weapon of decentralized liberation and resistance to the limits imposed on us by dominance, or even by our own bodies and minds. Sandberg expands on this by pointing to basic examples such as antibiotics or sex-reassignment surgery that facilitate the actualization of our fullness as beings. Sanders then goes into a domain more specifically relevant to the content of this essay by stating that, “Our freedom of thought implies a freedom of brain activity. If changes of brain structure (as they become available) are prevented, they prevent us from achieving mental states we might otherwise have been able to achieve. There is no dividing line between the body and out mentality, both are part of ourselves. Morphological freedom is the right to modify oneself.” This quote shows how our right to happiness and modifying our genetics is linked to our right to being neuro-diverse, or even to pursuing greater degrees of divergence in service of our own preferences or happiness. Assimilative technologies do fall under this morphological freedom in that they are often a radical act of survival even if the purity of agency is complexified by socio-political pressures. This means that although divergence may hold an evolutionary appeal, our radical body autonomy

also must honor the choices of those seeking to assimilate in order to better increase their mobility in other realms and according to various forces of domination.

Choosing Against Suffering

A few of the ways that I am neuro-diverse are that I'm a recovering addict with cPTSD (complex Post-Traumatic Stress Disorder) and chronic anxiety and depression. I would also argue that even my queerness and my transness are in the realm of neuro-divergence, even as they do not perfectly fit the socio-political structure of those criteria. These divergences make up some important and powerful parts of my personality, not the least of which being my compassion, resilience, and strength. That being said though, the notion that someone could select against the genes or have a first week abortion of a fetus that shows high probability that their life will entail this suffering of addiction, depression, and anxiety, is extremely appealing to me. The notion that someone would want to give choice and agency as to whether they want their child to be neuro-diverse in these ways does not feel like they are trying to eliminate or devalue me as a person. It feels like an increase in the potential agency of the genetic material donors to give their offspring the best chance at the least suffering. Depression and addiction are horrendous even if they've offered me certain insights and abilities. Maybe my propensity for extreme physiological cravings could be mitigated while the propensity for unbridled focus and dedication retained. To have the choice is better than to not. At least with the choice we can more effectively value the assets associated with these forms of neuro-diversity. Obviously this is more straight forward when the forms of neuro-diversity we're looking at have so many obvious negative aspects, such as severe anxiety, but the logic can begin to entangle in more ethically complex cases as well.

to think deeply about questions like whether they really have the patience to raise a child that is neuro-typical (see what I did there..) and could abort early pregnancies until they were able to have an autistic child. Genetic material donors could then select against some of the traits more likely to cause severe suffering in favor of those they believe the child would most likely opt for themselves. Of course the alternative is also true, parents who know that they are not appropriate for raising a neurodivergent child could spare a potential child the suffering of their generally thinly-veiled resentment.

The key for consenting adults is of course morphological freedom, both in the consent and autonomy senses of the phrase. Adults capable of the decision making faculties needed to meaningfully consent should be given autonomy over their choices and this applies equally to autistic persons. Should they resist medical or surgical technologies, this is their choice but, should they opt for it, it should be made available to them however strange it may seem to others.

Genetic Donors as Gods and Morphological Freedom

This view that focus on various early pregnancy or zygote related gene-editing choices sets up the genetic material donors as something akin to gods. There is of course a host of ethical considerations surrounding disability, ableism, and neurodiversity related prenatal decision making explored at length in many places elsewhere but what this view often leaves out is the autonomy and agency of the being this gooey cluster of cells could potentially become. This is a central ethical dilemma of life- a baby cannot give consent to being born, much less with what starting kit of genes. However, while the potential baby is still a zygote it is technically an extension of the carriers body, whether that carrier is a trans-man, cis-woman, or

Although it is, in many ways, an imperfect article, it goes into more nuance than is often encouraged within team social justice.)

The reality of neuro-diverse genocide and abuse through sterilization, institutionalization, stigma, denial of access, and outright murder both in present and historical contexts is a graphic one. These have additionally been the tools of fascist power in countless incidences. Nazi eugenics of course studied and learned from the United States. This world is not built to accommodate people with differing abilities or divergent neural architecture. Basic kindness (and a depth of disability and neurodiverse activism and research) suggests that the world should more often be changed to make itself inhabitable, than the individual should be forced to adapt to an incredibly hostile environment even though, wherein consent is possible, an individual may choose to make changes to themselves in order to augment their abilities. Just about no one is more familiar with this dilemma than folks on what is called the ‘autism spectrum.’

Institutionalization is so often a brutal and traumatic negligence enacted upon not only those who cannot communicate consent but often those who can and do not agree. Autism is very likely not really a disease in any common understanding of the term and instead points vaguely at a variety of symptoms in a wide range of acuteness. The popular understanding of autism is often much broader than the psych definition which often refers to more exclusively to the most severe range of experiences. Amongst all of these diverse symptoms are many that have led to unique insight (such as strong memory, creativity, and attention to detail) and others that have caused intense suffering (severe depression, self-harm, extreme sensitivity beyond the tolerable).

There is of course much debate as to which of these symptoms is environmental or biological, however, to the extent that any of these aspects are biological they have the potential to be gene edited and selected for or altered against. Early autism detection could give genetic material donors the opportunity

Choosing Divergence

The way that a society values its neuro diversity is incredibly important. In addition to having the ability to choose if a child is born with predilections towards certain forms of neuro-diversity, their should also be a movement to preserve, accentuate, and even optimize neuro-diversity– to get the most good and the least unnecessary suffering. From Autism to Schizophrenia, many of the greatest minds in history had non-neurotypical architecture. This is no coincidence. Mutation and deviation is the root of all evolution. Through genetic randomness, alternative ways of being are birthed and given a chance to thrive and adapt or wither and be cut out of successive gene pools. To some extent humans have evolved beyond the most glaring aspects of natural selection, but of course it still has the power to make or break our species as a whole. Our survival depends upon our ability to value our own diversity and facilitate the transmission of genetic material that is useful to our species as a whole. Alongside the developing science of genetic engineering, should be a social movement of people who not only, don’t choose against forms of neural diversity, but actively select for it. This could facilitate a (non-normative) normalization of neuro-diversity that could remove stigma and help to make the world more accessible for all kinds of people, regardless of where their strengths and abilities lie. This movement could be called “Genetics Against Normativity!” depending on how contrarian we wanted to be. We should help build the movement that celebrates and aids neuro-divergence even as we may choose to modify our own.

Queerness and Abortion

As soon as people hear about the often poor intentioned search for a “gay gene” they begin to panic — “THEY’LL KILL

ALL THE QUEERS!” It becomes an immediate eugenics and genocide panic. This reactionary response forgets that anytime we find a gene that we could select against, that means we can also select for it! That means that people who actually want queer kids can have them, or even select for them specifically, and the people who are transphobic, or the like, aren’t put in a position to bully and shame their queer child for the rest of their lives. This is ideal in many ways.

As a queer, gender-queer, transwoman who was paternally abused I would rather not have had those experiences or the toxic loops they emblazoned into my neural nets. I’m not married to this particular version of me as needing to exist in some arbitrary way. Abortion doesn’t mean that there is “no me”, it means that a different consciousness entirely is given a better chance at thriving. There could be no concept of me not existing or dying because there would never have been a me. I think it’s best not to mix my own fear of death with my sense of self-importance lest I begin to be an apologist for my abusers with the line of, “it made me who I am today.” Fuck all of that. I’m awesome but certainly not mandatory for the ongoing functioning of the universe. “I” would just have some more normative brother or sister version of myself existing if my parents decided that was all they could handle. As the technology advances though, I will have the ability to rapidly change my gender and sexuality anyways, so the kit of predilections and genes I started with, would be a mere suggestion on my life of experimentation anyways.

Of course the queer fear of eugenics through selective abortions is a reasonable one given the history, but do we really believe that society as a whole would select against queerness at a dramatically different rate than un-edited births? I mean, would you personally abort a queer child? I’m pretty damn sure I wouldn’t. I find it hard to believe that queerness would be (un-)naturally selected out and rather, trends moving towards increased recognition and reporting of queerness with time. Re-

search shows that teens these days are queer af! Especially as progress in the field of non-normative baby-making advance, humans will be able to continue to expand the notions of gender and sex farther out into and beyond our currently conceptually limited perceptions of possibility. Currently, future parents are given an approximation of their babies future assumed gender based on a sonogram examining the creatures unborn genitalia. As bizarre of a practice as this is, it shows the ways in which pre-birth information has the potential to become a more value neutral event. Afterall, sex-selective abortions are generally only prominent in more patriarchal and over-populated countries that explicitly value male children over females such as China, India, and arguably the U.S. which has even naively attempted government regulation and intervention against sex-selection. As a society becomes increasingly gender equitable, this practice dwindles out as there is no longer an economic incentive for it. In many places, this sonogram information is more of a novelty than an important factor in deciding whether the baby should live and so it should be in general. This could be the similar future of early detected queer genetic predilections. Long live (at least to 160) the parents who declare “Based on these test results, our baby appears to have a 87.6% chance of being super queer. Neat!” and then moves on with their day. Early detection of queerness though, would also lead to an interesting dilemma amongst those conservatives who are both adamantly pro-life and anti-gay. No doubt there would be an upsurge in potentially queer babies left at safe drop zones but probably also a decrease in queer kids kicked out of their homes for coming out.

Autism

(Please reference the Scott Alexander article, “Against-Against-Autism Cures” that covers some of these deeper questions in depth.