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SCIENTIFIC CONTRIBUTION

Should we welcome a cure for autism? A survey of the arguments

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Abstract Substantial research efforts have been devoted to developing a cure for autism, but some advocates of people with autism claim that these efforts are misguided and even harmful. They claim that there is nothing wrong with people with autism, so there is nothing to cure. Others argue that autism is a serious and debilitating disorder and that a cure for autism would be a wonderful medical breakthrough. Our goal in this essay is to evaluate what assumptions underlie each of these positions. We evaluate the arguments made on each side, reject those that are implausible and then highlight the key assumptions of those that remain.

Keywords Autism · Ethics · Cure · Disability · Bioethics · Medical ethics

Some people claim that the search for a cure for autism is fundamentally misguided because there is nothing *wrong* with people with autism (PWA). There is currently a significant amount of debate regarding the appropriate response to autism, with some arguing that autism is more of a way of life than a disorder (Roberts et al. 2008; Saner 2007; Trivedi 2005; Fenton and Krahn 2007; Harmon 2004; Sinclair 1993, 2005). Others claim a dire need for a cure. Given this current controversy, and approaching this issue from the very different perspectives of a moral philosopher and an autism specialist, we ask whether we should welcome the discovery of a cure for autism.[1]

Before we begin, we note that the question here of welcoming a cure is obviously not unique to autism. Some people certainly have not welcomed the advent of cochlear implants, and this has been much discussed. But, we have chosen to write about autism in particular because of the increasingly heated debate about whether autism is even a condition for which a cure should be sought, or whether it is simply a different way of life compared to “neurotypicals”. In contrast, although one can imagine someone asking if we should welcome a cure to schizophrenia or paraplegia, it does strike one as an odd question and there aren’t major advocacy groups protesting research into such cures. That being said, many of the arguments we consider could undoubtedly be relevant to the question of whether we should welcome cures for other disabilities, depending on how these disabilities manifest themselves, but space prohibits us from a broader discussion of the implications of these arguments for all disabilities. So, although we are happy to acknowledge that our arguments may apply beyond autism, we stress due care and caution in any such further application.

The question asked in this article is not the same as asking whether we should seek a cure, which has additional complications (e.g., resource allocation). The point is that if we should not welcome a cure—were one to just fall into

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[1] This normative question can be seen as a mid-point between the broader public policy question of whether we should actively pursue research in finding a cure and the narrower normative question of whether it would be good news that the prevalence of autism was decreasing (perhaps dramatically). The former question is very complex and there is no point in addressing it unless we first know we should welcome a cure. The latter question involves just a subset of the arguments that we address in this essay.

our laps—then we certainly should not consider looking for one. The issue at stake here is one of choice. Those who would welcome a cure are happy to give people a choice that could dramatically reduce the number of PWA in our world, and perhaps even the eliminate this group. Those who would shun a cure prefer that PWA and their guardians not have a choice about whether they live with or without autism. Choice is not an absolute good, since it may be better if people did not have certain choices.[2] But there needs to be a good reason to limit choice (i.e., liberty). The four commonly recognized justifications for governments limiting choices (Feinberg 1984) are: (1) The choice will harm another person (e.g., murder, stealing)[3]; (2) The choice will harm the chooser (e.g., not wearing a seatbelt); (3) The choice is offensive (e.g., displaying a swastika); and (4) The choice is immoral (e.g., sodomy). We are not discussing banning the use of a cure; we are talking about whether we should welcome a cure. Those who would shun a cure ("shunners") prefer for it to be not merely illegal to choose a cure, but impossible to choose a cure. Shunners desire to limit liberty, not by legal coercion, but by denial of technology. While the desire to limit liberty is always suspect, it is not always wrong. We should shun the advent of a plastic gun that could not be screened at airports, even though the existence of this technology increases people's choices. Justifications for shunning a technology that enables choices will be similar to justifications for legal limits on liberty.

The first type of justification is the least controversial, though not all harm to others justifies limiting liberty. Harms must be weighed against benefits and the degree of limitation necessary to prevent them. The other three justifications are all weaker. In policymaking, there is a presumption, albeit defeasible, against their use.[4] Justifications based on morality or offense tends to be weakest.

Although the political model of limiting liberty is useful, we need to be cautious in its application. In particular, one of the major concerns when considering if a government should limit liberty is whether this will set a precedent for further limitations. We fear laws restricting the Nazis from marching primarily because we fear who might next be silenced if the government is allowed to silence the Nazis. However, we might nevertheless welcome the news that the Nazis all ran out gas on the way to the march, that a hurricane prevented the march from happening, or that they lacked the technology to reach their audience. What all these have in common is that no one intentionally caused this limitation, they were simply '*rained out'* somehow. This type of situation is what really parallels our inquiry into whether we should welcome a cure. So, the big difference in our analysis of limiting liberty is that the slippery slope argument, which looms large in discussions of legislative limits on liberty, is not a concern. We are essentially asking: "Which news should we welcome more, that a cure for autism has fallen into our lap or that a cure for autism has been rained out?" Those who would argue that we should welcome a cure cannot do so using concerns about precedents and slippery slopes.

In this essay, we will *begin* by assuming (for the sake of argument) that more liberty is to be preferred, and thus that we should welcome a cure for autism because it gives people a choice. We will then consider these four kinds of justifications for shunning a cure. Our goal is not to come to a definite answer, but to identify the assumptions one would have to make to conclude that we should or should not welcome a cure for autism. But, first we will briefly clarify some concepts concerning autism.

Understanding autism and the idea of a cure

Under the DSM-IV, autism (Autistic Disorder) is one of five disorders under the umbrella category of Pervasive Developmental Disorders (PDD). Current academics and professionals generally refer to these disorders as autism spectrum disorders. All of these disorders have three main features in common, designated in the DSM-IV: impairments in social interaction, impairments in verbal and nonverbal communication, and restricted and repetitive patterns of behavior. Other diagnostic categories under PDD include Asperger Disorder, Childhood Disintegrative Disorder, Rett Syndrome, and PDD-Not otherwise specified (Filipek et al. 1999). For the remainder of this essay, we will use the word "autism" to refer exclusively to Autistic Disorder as defined in the DSM-IV, and not to any other form of PDD, though this distinction is often blurred in writing about autism.

The two most common subcategories of PDD are Autistic Disorder (autism) and Asperger Disorder. People with Asperger's do not experience a significant language delay as PWA do, their IQs are "normal", they have adequate self-help skills, and they display curiosity about their environment—qualities often (but not always) lacking in individuals with autism (Filipek et al. 1999). Objections could be made to these claims.[5] But for our purposes we

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[2] We would be thrilled if leaders of nations did not have the choice to commit genocide.

[3] This category includes cases of diffuse harm, where the choice leads to broader social harms (e.g., economic inefficiency, environmental harm) in which it is difficult to identify who is harmed.

[4] For example, seat belt laws are paternalistic, but they do so much good with such minimal intrusion on liberty that most people agree they are justified.

[5] Qualities such as IQ are in dispute because of the obvious difficulty in measuring the IQ of a non-verbal individual (as is the case with

can agree that there are many PWA who, given their current level of support, are unable to perform basic life care skills independently and who perform poorly on standard measures of intelligence, in addition to the three core features of social impairment, communication deficits, and repetitive behaviors.

By "*curing* autism" we mean eliminating the 'internal' obstacles that PWA encounter due to their autism. By "internal obstacle" we mean a behavioral or social characteristic caused by the neurological system that presents *inherent difficulties* to PWA in dealing with others, with themselves, and with the world around them. Curing autism does not include removing external obstacles that people might encounter, such as prejudice and discrimination by others.[6] So, although it may simplify things to think of a cure as changing someone with autism into a 'neurotypical' person, in fact the only essential feature of a cure is that it eliminates these internal difficulties.

Some people may confuse curing a PWA with making that person indistinguishable from neuro-typical people, that is, people who do not have autism (e.g., Dawson 2004). In fact, curing autism and achieving indistinguishability are quite different, neither one implies the other. One could mask the underlying internal obstacles that make a person autistic without actually removing those obstacles. Or, one could remove the underlying obstacles (curing him, by our definition) while leaving some external trace that distinguished him as having had autism (perhaps an unobtrusive but visible stereotypical tick).

Clearly, it is not hard to imagine any manner of insensitive or cruel medical treatments for PWA, or even cures with terrible side effects. But criticism of a particular treatment, or finite set of treatments, can never constitute an objection to the idea of curing itself. The question is: why might curing—no matter how innocuous the method—be bad? To answer this, and avoid distracting objections to particular kinds of treatments, it will be easiest to imagine that the cure is achieved by waving a magic wand. In other words, it is completely effective and has no cost or negative side effects. Of course, there may be drawbacks to not having autism, but these are not *side effects*, they are the primary intended effects of a cure.[7] Similarly, the adjustment from having autism to lacking autism is not a side effect. Far from being problematic, the lack of pragmatism created by this magic wand supposition turns out to be essential in the success of this analysis.

Finally, there are many times at which a cure for autism could theoretically be offered, from the pre-natal stage to the fully grown adult. Different benefits and objections apply to curing autism at these different points, but we will try below to consider all benefits and objections regardless of when they would apply.[8] Barnbaum (2008) argues it is wrong to cure adults, though it would be appropriate to cure others. We discuss her argument for this position below, but before we proceed further we must say a little more about liberty, competence and consent. PWA are not competent to consent to major life-altering medical procedures, so a legal guardian needs to make decisions on their behalf using the best interests standard (Barnbaum 2008). This may appear significant because the liberty being limited is not directly that of the PWA, but rather their guardians who would choose on their behalf. But unless one is trying to preserve the future competent choice of currently non-competent individuals (e.g., prohibiting cosmetic surgery on children who will likely become competent adults), restricting the liberty of guardians to act in the best interest of their charge is unacceptable. If competent adults have a right to consent to experimental cancer drugs, then PWA should have the right for their guardians to consent on their behalf. Some decisions might make us question the wisdom of the guardian's choice and so the wisdom of allowing that person to be the guardian, but prohibiting a choice by a qualified guardian that would be allowed to a competent individual is a *prima facie* suspect limit on liberty.

Offense and morality

These two types of justifications for limiting liberty play a primary role only when no one is harmed. If a choice caused harm, then the most powerful argument for limiting liberty would almost certainly come from that route.[9] We will treat these similar types of justifications together.

Footnote 5 continued
some PWA), using a standardized test. While many PWA are labeled with mental retardation (IQ below 70 and deficits in adaptive skills), there is evidence that many of these labels are wrong, due to the difficulty in assessing intelligence in a child with little speech, imitation ability, and poor direction-following (Cohen, 2002).

[6] The internal/external distinction isn't always obvious. Stereotypic behavior could be either, depending on whether it interfered with accomplishing tasks or simply made others think of the PWA negatively.

[7] There are surely vexing ethical questions about various treatments that aim at a cure (or its approximation), but it isn't worth discussing these until we know that curing is a good goal.

[8] If more of these considerations seem to apply to a particular developmental stage, then this does not imply that we are making any assumptions about when the cure would be used.

[9] Put simply, the justification for limiting people's liberty to kill people isn't primarily that it is offensive or immoral. These two types of justification only come to the fore of the discussion when the others don't work.

Perhaps any autism cure would be unnatural or would amount to playing God, and so curing autism is immoral. However, the flaws with these kinds of objections are well documented.[10]

Perhaps curing autism is offensive simply because of the linguistic implication that there is something wrong, in need of a 'cure' with PWA, when there isn't. But consider the question: Is anything wrong with *someone with autism doing something that makes himself*[11] *into a person without autism*?[12] The offensive linguistic implication has been removed. Offering such a procedure no more implies that something is wrong than offering a procedure that turns redheads into brunettes. If this seems like a sleight of hand, it is because the underlying concern for most people is probably not linguistic. Whether we call it a "cure" or not probably isn't the point. The real concern is likely that the availability of such a procedure would be harmful to PWA by marginalizing their services, causing discrimination, etc. We discuss these issues under the harm section.

Perhaps it is immoral for adults to make a decision about curing autism on behalf of a child, or to allow an immature child to make such an important decision. After all, autism is generally diagnosed by age 3, and thus it would be the parents of young children who face this decision. This objection poses no particular problem for curing autism beyond the problem posed for any other serious medical treatment that might be given to children. It would have to show either that all serious medical treatments of children are immoral or that there is something in particular that is ethically wrong with curing autism. The former is implausible. The latter is what the rest of this paper is about. Consent itself is not the problem.

Perhaps there are other less obvious reasons that a cure is considered offensive or inherently immoral. We are unaware of these, and space prohibits further inquiry into this possibility.

Harm to the person cured[13]

The simplest argument against any proposed cure (for anything) is that the cured person is worse off after the treatment, or that even if the end result is an improvement, the process of the treatment is so bad that it is not worth it.[14] Since we are abstracting away from any particular treatment, the latter problem does not concern us. However, the former problem does worry us. Might a person be worse off after having been cured of autism than before?[15]

Paternalistic arguments against welcoming a cure need to claim either that there is a significant probability that people will be worse off after a cure, or that even a slight probability of being worse off is not worth the risk. The latter is implausible, since it would equally condemn as unwelcome many clearly welcome treatments for other conditions, but we will consider the former possibility. If there were significant probability that people would be worse off after a cure, it might be reasonable not to welcome a cure, but not obviously. A small proportion (less than 10%) of PWA possess special skills, such as arithmetic calculation, music skills, etcetera (Treffert 2009), and someone might be worse off after a cure because he might then lack a special skill that he would have had. Welcomers may reply that the potential benefits of a cure are worth the risks, or that it is better for individuals and families to make their own assessment of risks. So, shunners are both risk averse and paternalistic, preferring that risky options be *rained out* for others. This is a coherent position, though it places a low value on respecting other people's liberty and differing value systems.

The adjustment argument

Barnbaum (2008) offers what we call the adjustment argument, claiming that a cure would be such a profound change and adjustment for an adult cured that it would not (generally or ever?) be in his best interest. It is plausible that suddenly gaining a theory of mind after literally having none could be quite disorienting, and she claims that this harm outweighs the benefits of the cure for the individual.

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[10] For a discussion of the problem with moral appeals to what is natural or unnatural, see David Hume's *Treatise on Human Nature*, book III, part 1, section 2. For a discussion of why criticisms based on 'playing God' amount to much the same thing, see Rachels (2004, chap. 4).

[11] We use the masculine pronoun as the gender neutral when discussing PWA, since most PWA are male. If the paper were about breast cancer, we would do the opposite.

[12] Or, similarly, is it offensive or immoral for a person *without* autism to make himself into a person *with* autism. If not, then it is hard to see how going the other way could be (since we are now setting aside issues of harm).

[13] Note that this is *not* the same thing as harm to PWA, which would include those PWA forgoing a cure. The potential harm to these people is considered in the next section.

[14] Arguments against treatments that don't work are irrelevant. No one would welcome mere snake oil. But even a real cure via magic wand could (in principle) make a person worse off (because of the fact that they no longer have autism).

[15] Because we have defined curing autism as *eliminating 'internal' obstacles that PWA experience*, it might seem as if we have stacked the deck. But there is no direct relationship between a lack of obstacles and well-being. Indeed, a complete lack of obstacles would surely make achieving a good life very difficult. So, some PWA *could* be worse off after being cured. This would likely be quite rare, though this is an empirical question that we won't tackle here.

If this is so, we should shun a cure for adults simply because the cure is bad for him or her.

One potential concern is that here and in other places Barnbaum (2008) puts a lot of weight on the idea that PWA literally lack any theory of mind, rather than some other difficulty that manifests itself in behaviors like those that we imagine someone with no theory of mind would exhibit. This is important because if the fundamental difficulty of PWA is not lacking a theory of mind, then it is much less intuitive to speculate that the adjustment will be as difficult and harmful as Barnbaum suggests.

However, let us suppose for the sake of argument that the adjustment to being cured would be very difficult. This still does not imply that we should not welcome a cure. As Barnbaum (2008) frequently admits "living an autistic life is not, ceteris paribus, as good as that child's life had he not been born autistic" (p. 149). She clearly establishes that lives of PWA lack profound and centrally important aspects of what it is to lead a good life. So, it is puzzling when she writes: "There is no reason to assume that once theory of mind is restored that an adult with a mature set of preferences would undergo a personality shift such that he would suddenly come to enjoy the world of mentalizing" (p. 206). Setting aside the plausibility added to this sentence by the irrelevant word "suddenly", there are many reasons outlined by Barnbaum herself to think that someone will come to have a more valuable and enjoyable life with a theory of mind. Of course, it is possible that the pain of adjustment could prevent or outweigh all the potential benefits, but it is hubris to claim we can be certain.

Another problem is that Barnbaum's (2008) distinction between adults and children is left too vague. It cannot have to do with competence to consent to a cure, since she presumes the adults are not competent. This distinction is important because even if the adjustment to the cure is quite difficult, a 21 year old has a lot of life left to appreciate the advantages of a cure. If the force of Barnbaum's adjustment argument is simply that older people will have less reason to opt for a cure, then we would certainly agree. But, the evidence for bad consequences of curing adults is simply not strong enough to justify a limitation of liberty. It is reason for caution and reason for a very careful discussion with guardians about which adults would be the most appropriate candidates, especially at the outset.

The personal identity argument

Some shunners offer the more radical personal identity argument that curing autism actually destroys the autistic person and leaves a new non-autistic person in his place, a significant harm.[16] The implicit argument here is that having autism is an essential feature of a PWA, such that curing the autism destroys him, like murder without physical death.

Taken literally, the personal identity objection is not plausible. The three primary theories of personal identity are: physical identity (of the body or the brain); identity of the soul; and continuity of psychological characteristics.[17] None suggest that an autism cure would sacrifice one's identity. Unless the proposed cure significantly compromised the integrity of a person's brain (which we assume would not be the case), there would be no worries from those who advocate a physical continuity theory. Advocates of soul based identity theories would have no particular worries because there is no reason to believe curing autism would destroy or replace a soul. One might think the psychological continuity theory would provide some basis for the personal identity objection, since curing autism might dramatically alter personality, but this would be a mistake. To be plausible as a theory of personal identity, the psychological continuity theory needs to allow for rather dramatic changes in an individual's personality over his lifetime. The point of this theory is that these alterations in psychological characteristics (e.g., memories, other beliefs, desires, habits) must allow for a degree of continuity in order for it to be the same person. So, if someone remembered some events or maintained a set of beliefs or desires over a period of time, then she would be the same person *even if many of her psychological characteristics changed*. The only thing that would indicate a failure of personal identity in the same body would be an abrupt discontinuity in all (or virtually all) psychological characteristics, such as a science-fiction case of total amnesia that also wiped out beliefs, desires and other psychological

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[16] This criticism has been levied especially against parents seeking a cure, who opponents say are seeking to *replace* the child with autism with a different child, who does not have autism. Below are two examples of this, written by PWA. Jim Sinclair (1993) writes: "What the rest of the world needs to know about autism is that it's not something that can be separated out from the person, it's part of the person, and so you cannot meaningfully say I love my child but I hate the autism" (Shapiro 2006). Baggs (2008)writes:

> Parents write messages on the Internet saying they wish they had a normal child—one who speaks more "normally", or has more "normal" social relations, or who doesn't do such "odd" things … The depth of pain that this causes an autistic reader is inexpressible. It is a deep denial of who we are, and a rejection by the same people who say they love us and want to help us. It effectively tells us, "You do not deserve to exist. Your existence causes pain. You should be someone different."

[17] Thomson (1997) defends a version of the bodily identity theory. The soul theory has been defended by many authors, from Plato to Aquinas to Descartes, but is not popular among contemporary philosophers. Shoemaker (1984) is one of many defenders of psychological continuity as the criterion for personal identity.

characteristics. No plausible cure would have such a profound effect, so a cure for autism would not literally destroy PWA.

But perhaps the objection is not literally about personal identity, but rather just about some very important element of personality. A medical treatment that changed an anarchist professional wrester into an neo-conservative actuarial statistician would be morally troubling. One could talk metaphorically about having destroyed one person and replaced her with another person, and this result might be a good reason not to do the treatment. Even so, it may also be acceptable to offer a medical treatment that will drastically alter someone's personality. Perhaps a person has become an anarchist wrestler because a tumor has grown in her brain, and upon removal we could expect her to return to actuarial work. The tumor patient may not choose to remove it, but it would not be wrong for doctors to perform the surgery *with appropriate consent*. Drastic alterations in personality don't inherently make a treatment wrong. Curing a drug addict will drastically alter her personality, but this does not make it unethical. Of course, this does not imply that it is right to treat PWA in ways that will drastically alter their personality, only that a drastic effect on personality is not adequate reason to shun a cure.

So, if one wants to justify shunning on the basis of harm to the person being cured, one needs to claim that: (1) there is significant risk of a person being worse off by being cured; (2) the likely benefits of the treatment are not worth the risk; (3) it would be better if people were not able to make this choice on an individual basis.[18]

Harm to others

Does a cure for autism harm people who are not cured and, if so, is this harm sufficient to justify shunning a cure? We discuss possible harms first to other PWA and then to neurotypicals.[19]

The reduced resources argument

Perhaps, just as the needs of PWA have been highlighted by the greater number of diagnoses, a decrease in prevalence would diminish the attention given to PWA. The reduced resources argument claims that a cure would diminish services and research for improving the quality of life for PWA. In autism, this could limit the availability of appropriately intensive early intervention, e.g., individual discrete trial instruction, which is often recommended at 35–40 h per week (Lovaas 1987). So, a cure might end up making life significantly worse for PWA who are not cured. This may be a particular problem if the cure were not available to people past a certain age.

Services and research on autism may diminish if there is a cure, though not certainly. It is also plausible that the resources that had been spread thin in serving a large number of PWA could now be focused on providing better services to the remaining population. The actual changes in resource reallocation cannot be settled here, but there is certainly reason for this concern.

Another response asks: Would it be good to increase the size of the autistic population? Suppose, for argument's sake, we find a strong causal relationship between some environmental factor and the development of autism. For convenience, suppose that high salt intake in the first two years makes children much more likely to develop autism—a hypothesis for which there is absolutely no evidence.[20] If so, we could easily increase the population of PWA by encouraging parents to use more salt. By the logic of this argument, this would be good because it would increase resources devoted to research and services for PWA. Indeed, if you knew that salt caused autism, it would be wrong to reduce your child's salt intake. Or, if there is a significant distinction between justifying individual actions versus social policy, this argument commits us to social policies that not only fail to discourage, but actively encourage increased salt intake in young children, to bring about the desirable result of having a larger population of PWA. If this argument implies this very counter-intuitive conclusion, then it is refuted by *reductio ad absurdum*. To test this implication, we consider some potential rejoinders.

First, one might claim that decreasing the autistic population is bad because resources would be cut, but that increasing this population is also bad because adequate resources would not be added. This rejoinder asks us to believe the implausible claim that we are now, coincidentally, at the ideal population of PWA. Second, one might claim that a social policy increasing the autistic population interferes with parents' choice in what they want for their children (i.e., whether they want them to have autism). But this rejoinder is clearly not available to someone opposed to giving parents this same control by means of a cure for autism. Third, one might claim that there is a difference between reducing the population by curing autism

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[18] This will still be a defeasible justification. Other kinds of justifications may override or outweigh it. More importantly, this is a very heavy set of assumptions, making for a weak argument.

[19] "Neurotypical" is used by some people who write about autism to refer to people not on the autism spectrum.

[20] Salt is just a placeholder for any environmental factors with a causal relationship to autism, which are yet unknown. Autism is likely caused by a combination of genetic and environmental factors. The environmental factors are unlikely to be as simple as salt consumption, but this does not affect the argument.

(supposedly wrong) and by failing to encourage what will cause more autism (supposedly right) because the former interferes with the natural course of events while the latter allows them to proceed without interference. This rejoinder won't work either. Aside from all of the established problems basing normative arguments on what is natural or unnatural, this position commits one to the idea that there is a natural salt intake for young children, that we are now at that level, and that providing parents with information on how to reduce the probability that their child will develop autism is wrong.[21] Barnbaum (2008) further argues that this places an unfair burden on families.

If we reject the counter-intuitive conclusion that we ought to increase the population of PWA, then we should reject the reduced resources argument. Of course, this does not mean we should welcome a cure, and it certainly does not imply we should choose a cure if one were available. All this means is that one potential reason for shunning a cure is unpersuasive.

The decreased motivation argument

Perhaps we should shun a cure because the mere existence of a cure will make people believe that having autism is a choice, which will then reduce people's motivation to accommodate PWA. Call this the decreased motivation argument. Imagine two people who use a wheelchair, one due to an accident and one due to the person's habit of doing outrageous daredevil stunts. Plausibly, many people would be less willing to accommodate the daredevil, who they perceive as having had control over her condition. So, if there were a cure, others may see PWA as having control over their condition and be less willing to accommodate them. For example, many citizens may be less willing to have state funded early intervention services such as discrete trial teaching or other intensive intervention, which cost a significant amount of money per child, not to mention ongoing costs for social services as these PWA age. This would likely be harmful to those who had autism, and so is a justification for shunning a cure.

Responses to this argument could: deny that there would be any decrease in accommodation, deny that a decrease would harm PWA, or claim that such harms are no reason to shun a cure. If the cure is ideal, as we assume here, then it is plausible that people would be less accommodating and that this would be harmful.[22] But an objector could argue that being less accommodating is reasonable, even if harmful to some. Imagine a society where some people have a disability ("X"). One can live a decent life with X, but it can be inconvenient. This society provides people who have X with adequate (not extravagant) accommodations. A technique is being developed to induce X. Some citizens are considering using this technique to intentionally acquire this disability. Perhaps this is because, although X is inconvenient, they prefer life with the accommodation that is provided (though the vast majority of people do not prefer this). Perhaps they have some other reason. Call these people "choosers", in contrast to "non-choosers" (who have X, but didn't choose this). Society has a moral obligation to accommodate the needs of non-choosers, but no obligation (or a lesser one) to accommodate choosers. There are no choosers yet, since the technique is not yet available, but given limited resources, it is appropriate to prioritize non-choosers. Now suppose that an ideal cure for X is developed. Some non-choosers may opt not to be cured, as is their right. Many people in society now see those in this group as in the same moral category as choosers, since they have chosen to remain disabled.[23] If they are in the same moral category and if society should make their accommodations a lower priority, then it is a good thing to be less motivated to (i.e., give lower priority to) accommodate those who forgo an ideal cure, even though this will harm these people.[24] So, under some plausible assumptions, DMA is not a good reason to shun a cure.

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[21] Regarding basing normative arguments on what is natural, see David Hume's *Treatise* (as noted above). Moreover, it would seemingly be quite odd for disability rights advocates to put normative weight on what is natural.

[22] The major danger is a disparity between appearance and reality. If people believe the cure is nearly perfect, but it actually has major drawbacks, then there might be an unjustified decreased motivation to accommodate. Individuals may be willing to pay for accommodations (e.g., sign language interpreters) for those who have no choice in being deaf, but unwilling to pay if these people could be made to hear at the mere wave of a wand. Imperfect cures (e.g., cochlear implants) are different, and society is likely more willing to pay for accommodations if this is the alternative.

[23] This is particularly true if the cure would be free to those making the decision (e.g., covered by health insurance), but less likely if it was costly. This point was articulated by an anonymous reviewer.

[24] This objection to the DMA assumes that there is no significant moral difference between people who choose to make themselves disabled and people who choose not to cure their disability when an ideal cure exists. If, 1) there is no significant moral difference between choosing to induce a disability and choosing not to cure one, and 2) it's reasonable to be unwilling to provide accommodations to those who actively choose to need them, then it's also reasonable to be unwilling to provide accommodations to those who passively choose to need them. But, if there is a significant moral difference between inducing and not curing, then people are less likely to withhold accommodations because they will presumably see this difference and not make the inference that withholding accommodations is appropriate.

This objection to the DMA assumes many people's motivation to provide accommodations accurately reflects whether there are significant moral differences, when it is entirely possible that people's moral intuitions are commonly in error. To be more precise, if:

1. people who choose to forgo an ideal cure to a disability are more deserving of accommodations than those who choose to induce such a disability, and;
2. many people act as if there is no such difference by treating people who forgo an ideal cure as no more deserving of accommodations, and;
3. in the absence of a cure, people would have been more accommodating to those who forgo an ideal cure,
4. there will be an unjustified decrease in motivation to accommodate PWA caused by the advent of a cure.

The antecedent claims of this conditional are plausible, though it is also plausible that they are not all true. Because they are plausible, there may be unjustifiable harm to others caused by the advent of even an ideal cure. This could be a reason for shunning a cure.

The pressuring people argument

Perhaps we should shun a cure because the existence of a cure would pressure PWA to choose to be cured and it is wrong to pressure someone into such a life-changing medical decision. Call this the pressuring people argument. Pressuring someone into a decision certainly sounds like a bad thing, especially if it is an important decision, but if all it means is altering someone's motivations, it should not be condemned. Giving someone a winning lottery ticket may pressure her to go to the store and cash it in, but it certainly isn't wrong. Offering a job applicant a free lakeside residence may pressure him to take a job, but this is an enviable position. Pressure, in the pejorative sense, must involve more than just altering payoffs. Suffice it to say that the mere existence of an extra option does not constitute coercion (i.e., immoral pressure), if one's previous options are still open.

In contrast, we suggest that the real objection here is probably based on the concern that the existence of the new option is likely to cause other people to exert unacceptable pressure on PWA to choose to be cured. The problem is not inherently with there being a cure, but with the behavior invited by the cure's existence. However, since our question is whether we should welcome a cure, this not an adequate response. We would not welcome something that invited many immoral actions, even if they did not flow inherently from it.

Consider bone marrow donations, which are not inherently problematic, and suppose the existence of this procedure causes some people to be coerced into donating their bone marrow. Under what circumstances would this make us shun the process of bone marrow donation? First, we'd need to decide what constituted coercion. Second, we'd need to determine that the coercion happened frequently. Third, we'd need to conclude that the badness created by the coercion outweighed the goodness created by the bone marrow donation.[25] As a response: (1) Although we cannot settle here what constitutes coercion, Wertheimer (1987) provides the foundation for modern thinking about this issue, arguing that coercion requires that another person threatens to take away the victim's rights to an extent that the victim has no reasonable choice but to give in. One's own feelings of guilt from not doing something (e.g., donating one's marrow), anticipation of great appreciation from others, and concerns with disappointing others, are not coercive. (2) Given this understanding of coercion, it is unlikely that coercion is common in marrow donation. (3) It is almost certain that the goodness coming from marrow donation outweighs badness from the coercion that does happen.

Applying these same three criteria to an autism cure would likely result in a similar conclusion: coercion is insufficient reason to shun a cure for autism. As we continue to stress, this is not a reason for people to choose to be cured. It just shows that this is not a reason to shun a cure.

The culture argument

Perhaps PWA together constitute an autistic culture, with a unique way of thinking, communicating and living in the world (Sinclair 2005; Roberts et al. 2008; Saner 2007). If true, then curing autism in a large proportion of cases not only further harms the remaining PWA, it threatens to destroy a culture which may have intrinsic value. Evaluating the *culture argument* raises two questions: Is there such a thing as an autistic culture? If so, is it more important to protect this culture than to give people a choice about having autism?

The definition of "culture" is controversial and we do not pretend to settle it here. Experts on culture disagree about nuances, and there are more and less rigorous senses. Even if there were no autistic Culture (capital "C")

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[25] Deontologists are in the same boat as consequentialists here. The question is about whether to welcome the existence of a procedure. The existence of the procedure may invite people to act immorally, but you (the potential welcomer) aren't doing anything wrong. A strict deontologist cannot DO wrong to create more good in the world, but she can welcome the existence of something that will create more good in the world, even if that thing will invite some people to do immoral actions. This is true even if the deontologist (implausibly) judges the amount of good in the world solely based on the number of immoral actions done.

according to rigorous academic understandings of the term, there may be an autistic culture (small "c"), and such a thing may have significant value. We consider both.

In brief, a group of people forms a Culture because those people have various connections and commonalities. Part of this is a common way of understanding the world and communicating with each other about their worldview. Another part of Culture stressed by anthropologists is that it involves practices passed down to future generations. Cultures typically include elements such as: language; codes of conduct (etiquette, morality & laws); rituals (religious & secular); systems of belief; artistic traditions; and a typical manner of preparing food (Jary and Jary 1991). No doubt, some of these ideas could be stretched to fit PWA, but by these quick considerations it seems implausible that there is an autistic Culture by rigorous academic standards. The existence of a deaf Culture seems much more plausible because of their shared language and other commonalities that result from deaf people's tendency desire to be around others who are deaf, though even this is a marginal instance of a Culture. Despite the recent advent of gatherings of PWA like the Autreat and on-line forums, there is no similarly complex set of social elements for PWA that bring them close to being a full fledged Culture like the Japanese or Kurdish Culture.[26]

But there is another meaning of culture, such as the culture of science fiction fans, the culture of a particular college campus, and the culture of cancer survivors—to name just a few. There is much less doubt that there is an autistic culture in this sense. Of course, one might claim that unlike these groups, PWA do not tend to congregate and communicate with each other consistently, and also do not often share interests. However, a plausible case can be made for the existence of an autistic culture, so we assume for now that there is one.[27]

The loss of a culture strikes many as particularly tragic. Consider the all but completed loss of Yiddish Culture from the world, or the threat of an inexorable decline in Native American Culture or Tibetan Culture. Then there is the potential threat to the survival of Deaf Culture posed by technological advances. Of course, if Cultures do have an intrinsic value (or even an instrumental value), then their loss makes the world a poorer place, but it is false that any Culture has such great value that nothing could outweigh its loss. The world has lost countless Cultures and will continue to do so, and while each one may be a tragedy, they are not all equally tragic. Indeed, the loss of some may not be tragic at all; consider the Nazi Culture. Setting aside the rare exception of such truly bad Cultures, it seems that the loss of genuine Cultures is generally more significant than the loss of metaphorical cultures, though of course such a generalization is not adequate to establish that the loss of autistic culture is outweighed by the benefits of a cure.

Before we address the loss of autistic culture, consider the culture of cancer survivors. These people share a common bond, meet in support groups and elsewhere, talk to each other and have a literature concerning their common bond. If we found a way to prevent all cancer, we would lose this culture entirely within a few generations. One might reasonably see some tragedy in the loss of this culture, since they have a unique perspective on life, have made important contributions to our world and have achieved remarkable feats—to name just a few reasons. However, without belittling these considerations, we cannot imagine a reasonable argument against preventing people from getting cancer, just so we can preserve the culture of cancer survivors. The cost from the suffering caused by cancer is simply too high. So, it is certainly possible to justify an action that will eliminate a culture, even if that culture has a significant inherent value and contribution to the broader Culture.

Obviously, autism is nothing like cancer; that isn't the point. The question is whether the hardships associated with having autism are more significant than the inherent and instrumental value of preserving autistic culture. Since we have established that the preservation of a culture is not an inviolable goal and since the hardships associated with autism are quite evident, the burden of proof falls on those shunning a cure to show that the value of autistic culture itself (not contributions of individual PWA, discussed next) outweighs the value of curing autism. This strikes us as a difficult argument to make persuasively, and so the culture argument is unlikely to justify shunning a cure.

The talents and perspectives argument

Perhaps we should shun a cure for autism because of the important contributions to the world of PWA. There is little doubt that some PWA have unique skills and make important contributions to the world.[28] However, it is not enough to argue that PWA sometimes have skills that allow them to make important contributions. Shunners using this talents and perspectives argument must show that these skills are due to the person's autism. Many neurotypical

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[26] Barnbaum (2008) agrees and argues extensively that the community of PWA do not constitute a culture.

[27] There are certainly numerous websites, internet discussion groups and even some annual gatherings of PWA. For example see: Autreat website: http://ani.autistics.org/autreat.html; Autscape website: http://www.autscape.org/.

[28] The most famous of these is very likely Temple Grandin, who is largely responsible for significant changes in how livestock are handles, but others exist who are less well known. If Grandin were diagnosed today, she might be diagnosed as having Asperger's syndrome, but there are many examples of exceptional PWA in Biklen et al. (2005).

people have useful skills too, so the heart of this argument is not that PWA are more likely to have some useful skills, but rather that they are more likely than neurotypicals to have a unique set of skills which are useful.

Unique 'savant' skills seem to be more prevalent in PWA, though approximately 90% of PWA have no savant skills (Treffert 2009). These skills often involve memory, music, mathematics or art. Should we shun a cure for autism because of the existence of these skills? The implication is not straightforward, even if we grant that these skills are very valuable to society. Imagine that there were some people who had amazing power to improve our lives, like an ability to predict crimes before they happen, as in the short story "The Minority Report" by Philip K. Dick. Imagine that these psychic people (or "pre-cogs") were also disabled in a way directly related to their psychic ability, such that the disability and extraordinary ability were inseparable. In this case, one might certainly shun a cure for them. They would be of such great use to society that it would be a tragedy to lose their unique abilities.

However, there is surely something troubling about being happy that these pre-cogs or their guardians have no choice in whether to be pre-cogs or non-pre-cogs (i.e., about shunning a cure). Even if we assume (contrary to the story) that the pre-cogs are given the choice to use their ability or not and that they can lead a tolerable human life even if they use their psychic ability, these individuals or their guardians are still not given a choice. Their liberty is limited. We have not said what this associated disability is because the analogy works no matter the severity, albeit somewhat differently. If the disability is mild, pre-cogs or their guardians would likely not choose to be cured, which would allow us to gain the benefits of their skills while still giving them the liberty to choose. In this case, this argument is not persuasive unless we assume that there is a large gap between the actual and perceived disadvantages of the disability. Such a gap could make guardians (especially parents) choose a cure irrationally, when not being cured is in the best interest of the individual.[29] If the disability is severe, then many pre-cogs and guardians would likely opt for a cure, depriving society of their important skill. Overall utility may be dramatically lower in this case, which could be a rational ground for shunning a cure. So, this argument may provide a good reason for shunning a cure in two different ways. The first approach applies primarily to early cures chosen by parents and it involves the following assumptions:

1. most people (e.g., parents) believe the inherent disadvantages of autism are major;
2. the inherent disadvantages of autism are actually minor (relative to the advantages);
3. efforts at public education to correct this misperception would be unsuccessful;
4. maximizing the benefits to and from people with autism is more important than empowering parents/guardians to make choices on behalf of their families and children.

The biggest hurdle in making this argument persuasive is establishing the truth of step 2, though steps 3 and 4 are not obviously true. The second approach accepts that autism is has major inherent disadvantages, but argues that shunning a cure is still appropriate by assuming that:

1. a utilitarian moral theory (the ends justify the means) is true;
2. PWA make major contributions to society; and
3. showing that the good from these contributions outweighs the preferences of people to be cured of a major disability.

These three claims are plausible, though again, it is also quite plausible that they are not all true.

The diversity argument

Perhaps we should shun a cure for autism because it would reduce diversity in our world. In evaluating the diversity argument**,** we first note that while curing autism would reduce some kinds of diversity, one must ask what kind of diversity is reduced, and why that diversity is good? Diversity can be good or bad. Farming genetically diverse potatoes is good for avoiding famines, but including species that are poisonous or rot rapidly would be bad. Juries should be diverse in some ways (to avoid prejudice), but including people with anti-social personality disorder or people incapable of understanding the trial is bad. Diversity for its own sake is not a persuasive good.

The diversity offered by PWA may be genetic or perspectival. Genetic diversity is not always a good thing. People with congenital heart valve defects represent genetic diversity. Of course, a seemingly bad genetic trait (e.g., sickle cell trait) may turn out to have positive aspects (e.g., malaria resistance), but to make arguments based on this type of secondary genetic benefit one needs evidence. So, advocates of the diversity argument would probably focus on perspectival diversity, which invites the question of what good this perspective does. If having a diversity of perspectives is good because PWA have a unique set of skills, then we are just back discussing an argument we have already covered. Indeed, any reason why the kind of diversity created by autism is good can be considered on its own. Diversity itself adds nothing useful to the discussion.

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[29] Such ignorance is much less likely, but not impossible, for the individuals (e.g., pre-cogs) themselves.

The family benefit argument

Perhaps we should shun a cure for autism because having a child with autism brings families together.[30] Of course, for this family benefit argument to succeed, it needs to be shown that autism does bring families together. Few dispute that the presence of a PWA within a family has a major impact on the lives of everyone in that family.[31] But will this impact tend to be positive or negative, and if positive, does this justify shunning a cure?

We cannot naïvely assume that the impact will be positive or negative. Many people claim that family members grow closer and gain a greater appreciation of various aspects of their lives to such an extent that they are indeed better off (i.e., they have a higher quality of life) because a member of their family has autism or another disability (Klein and Schive 2001). So, let us take a brief look at evidence surrounding autism's impact on families. Some families find having a child with autism has a positive impact on parenting skills affecting all of their children, including non-autistic siblings (Beveridge 2001). Others find a positive impact on siblings in terms of developing compassion and tolerance (Cohen 2001). Others mention both the challenges and the benefits of having a child with autism on their families. For example, Naseef (2001) discusses the inevitable grief and sorrow upon learning of the diagnosis, as well as the potential for extra strain on a marriage. Yet, he also finds that a child with autism can bring a family together when all members work together to support each other. This combination of marital strain that can be addressed through positive coping skills and lead to a strong family is also the subject of Senator's (2005) family story. An article written by multiple members of a family, including the individual with autism himself, also describes challenges that include sibling relationships, yet all authors also come to the conclusion that they have learned from and grown stronger from the experience of having a son/brother/stepson with autism (Donnelly et al. 2000). In all, research demonstrates that while having an individual with autism in one's family can lead to unique joys and positive experiences, it can also lead to serious family disruptions and marital strife.

Recall that the question is not whether PWA should be cured, but whether it would be good for them to have the choice. An opponent of the family benefit argument might argue that a choice would allow the families who are benefited by autism to retain those benefits, while allowing those harmed by autism to solve their problem. This seems like an appealing objection, but it is too simplistic. Benefits may come only by working through struggles that most people would not choose to go through. Those who advocate this argument are offering a paternalistic argument that favors forcing families, for their own good, to go through an experience that they would probably not choose. Like all paternalistic arguments, this argument becomes persuasive only when the targeted benefit is quite likely and risk of negative consequences is minimal. But the evidence cited suggests that although having a family member with autism sometimes brings a family together, it sometimes pulls it apart. It seems that frequently families that already have strong healthy bonds are brought together, while those families whose bonds are already strained are pulled apart (Naseef 2001). There is no convincing evidence either that most families are significantly improved or that the risk of harm to families is minimal, so the family benefit argument is unpersuasive.[32]

The perfect child argument

Perhaps a cure for autism would promote the unhealthy expectation in society that our children should be perfect, that anything less than perfection makes a child undesirable, and perhaps even that imperfect children are less worthy of our love and care. The expectation of perfection in one's children is certainly likely to be damaging to both children and parents, regardless of whether the children have autism, and so ought to be avoided. The perfect child argument claims that a cure for autism should not be welcomed because it leads to these harms.

One cultural narrative in the USA goes that until recently parents were satisfied with children so long as a few criteria of visible health were met, but modern medical advances like genetic testing are raising the bar on what parents hope for and expect in their children (Cohen 2008). The availability of a cure for autism would feed into elements of the medical system that appear to be seeking to create perfect children, and since this is unattainable, it thereby dangerously skews parents' expectations.

An objector to this argument may argue that any attempt to eliminate children's health problems could be cast as an attempt to make them more perfect, but since it would

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[30] This argument is only plausible if a cure does no good for the PWA. Just as it would be ethically suspect to put a PWA through a treatment that harmed him for the benefit of family members, it would be equally ethically suspect to withhold a treatment that would benefit him for the benefit of family members.

[31] While the presence of any additional person in a family will have obviously an impact, some features of that person will themselves have a major impact while others will not. Eye color will not have a major impact, but autism will.

[32] Justifying paternalistic restrictions on liberty generally requires overwhelming evidence of harm. Even with this (e.g., seat belt laws), the restrictions meet considerable resistance. This argument is unlikely to meet this high bar.

clearly be a mistake to oppose all efforts to eliminate health problems and birth defects, the perfect child argument cannot be persuasive. When our children are ill, either physically or psychologically, we take them to be cured—made healthier, more perfect. We address problems both after they arise and before they happen. We shelter children when their immune systems are weak. We provide inoculations to prevent disease. We try to prevent accidents and injuries that lead to various disabilities. In these ways, we seek to attain more perfect children, and none of these are bad.

In response, advocates of this argument might claim that the problem is not in protecting one's child from disease or injury, but rather in the impression that perfection is attainable. Advocates may claim that this comes from curing a disability that a child already has, rather than from preventing illness or injury, which they admit is appropriate. But if this is the point of this argument, then repairing cleft palates, surgically correcting vision problems, etc. are also dangerous, in that all of these would promote the same expectation of perfection. In the end, there seems no reason to worry specifically about a cure for autism, as opposed to cures for any other disabilities.[33]

Fundamentally, the problem here is not having children with fewer cognitive, psychological, and physical difficulties; the problem is in managing parents' expectations. No matter what, some parents are likely to be disappointed, as some always have been. The most effective approach to combating the perfectionist problem is almost certainly better parent education, rather than trying to reduce expectations of perfection by ensuring there are many people with disabilities. So, the perfect child argument does not appear to be a persuasive argument against welcoming a cure.

Thus, the strongest arguments for limiting liberty are the decreased motivation and the talents and perspectives argument. These may provide reasons for shunning a cure. But even if these are sound, at this point they are merely *prima facie* reasons. Until we consider arguments in favor of welcoming a cure (not simply the objections to arguments for shunning it), we have only half the story.

Going beyond a presumption for liberty

Although there is presumption in favor of liberty, such that those seeking to limit liberty have the burden of proof, there are times when even more can be said in favor of certain liberties. Curing autism may have much more to be said for it. First, because PWA seemingly have a very limited ability to empathize with others, there are serious questions about whether PWA are full members of the moral community with full rights. Second, many argue that PWA have a lower quality of life than they would if they lacked autism, and (less significantly) that autism lowers the quality of life for others.[34]

The moral community argument

Philosophers of mind have been fascinated by PWA and have speculated about the nature of autism and its significance. More recently, questions have arisen about the moral status of people with cognitive disabilities in general (Nussbaum 2007) and PWA in particular (Kennett 2002; Shoemaker 2007; Barnbaum 2008; Krahn and Fenton 2009). If one bases membership in the moral community on the ability to empathize, as Hume and some other do, then PWA may not qualify for full membership, like people with anti-social personality disorder or advanced Alzheimer's disease, and various non-human animals. Benn (1999) and Hobson (1993) exclude PWA from full membership for similar reasons. This does *not* imply that PWA have no moral status, but diminishes their rights. So, this moral community argument provides a powerful rationale for curing (and bringing them full membership), thereby reducing the chance of infringing on their otherwise limited rights.

Although it is theoretically interesting whether a person with absolutely no capacity for empathy would fall short of full membership in the moral community, any normative implication for PWA is both theoretically and empirically troubling. Theoretically, Kantian moral theories can make room for PWA as full moral agents (Kennett 2002). Moreover, consequentialism can accord PWA equal standing in moral calculations. Although people who find it difficult to empathize are admittedly disadvantaged when attempting to make direct utility estimations themselves, this task plays a very limited role in how most contemporary utilitarian theories would have moral agents deliberate. Empirically, we are far from understanding the nature of autism and whether PWA lack *any* ability to empathize. It is much more difficult for PWA to understand

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[33] The conclusion that cures for all disabilities should be shunned could only be justified by ideology. Reflective equilibrium (Rawls 1971) does not permit our adopting the moral intuition that shunning all these is correct.

[34] "Quality of life" is meant in the standard sense used in medical ethics, as a measure of how well someone's life is going. Disputes over the scale to use or how to measure it are irrelevant. We just assume that everyone's life can get better or worse, and that it is good for them to be better. Whether quality of life is subjectively or objectively determined is also irrelevant. Even on the subjective interpretation, one can be mistaken about what will make one better off.

what others are thinking and feeling, but it is a big step from this insight to the claim that PWA are incapable of empathy (Schrandt et al. 2009). So, even if a strong sentimentalist theory of morality were correct, which is far from clear, there would still be major doubts about any claim that PWA are not full members of the moral community. This is not a strong argument in favor of welcoming a cure.

The quality of life argument

There are many reasons to think that autism lowers one's quality of life.[35] Here we consider how the three broad characteristics of autism described previously, as well as unique sensory qualities of PWA, may impact quality of life. If autism decreases quality of life, then the quality of life argument provides positive reason, beyond the presumption of liberty, to welcome a cure.

PWA generally have some form of communication deficit, ranging from unusual language to delayed verbal language or even failure to develop verbal language. An inability to verbally express wants, needs, preferences, and ideas can be very frustrating. At the most basic level, an inability to communicate leads to behavioral difficulties, such as using inappropriate behavior like screaming, aggression, or self-injurious behavior to demonstrate one's feelings (Durand 1993; Sigafoos and Miekle 1996). This may get an individual what he wants, but it does not lead to meaningful or satisfying interaction for anyone, and may lead others to avoid interaction, further decreasing quality of life for all involved. One might argue that good caregivers can make sense of the behavior and teach more effective and appropriate communication methods, such as using pictures (Bondy and Frost 2001). This is true, but highly trained caregivers are not always available, and quality of life may be impaired despite the best efforts. Communication deficits also exist in receptive language, impairing social interaction. Many PWA may want to make friends and be social, but lack the understanding of body language and other subtle cues that neurotypicals understand intuitively. This can lead others to avoid or exclude PWA, causing them feelings of confusion and distress. Although accommodations may mitigate this, communication difficulties consistently impair quality of life.

Regarding social interaction, PWA often prefer solitary activities, engaging more with certain objects than with people. Consequently, personal relationships are more difficult to develop. One might argue that while neurotypical individuals generally see this as a negative effect of autism, PWA prefer this, so it is not negative. The impact on quality of life for those who desire only solitary activities is admittedly debatable.[36] However, some PWA do desire interaction, and their quality of life is reduced.

Repetitive and restricted behavior interacts with other characteristics to impact individuals' lives. Most PWA display some type of repetitive behavior or have one or more intense and often unusual interests (e.g., the number five). This can impact PWA in three ways. First, it limits social interaction if their insistence on a repetitive activity excludes time for other activities. Second, when PWA who possess strong verbal skills have an intense interest in a narrow subject (e.g., flags), they often fixate and talk of nothing else, which discourages others from future interaction. Finally, PWA often have an intense need for sameness and predictability, making it very difficult to adapt to new places, people or circumstances (e.g., a new route to school). All these may lower quality of life.

Finally, many PWA have unique sensory characteristics such as being overly sensitive to sound, touch or visual stimuli. These characteristics can make it difficult or even painful for PWA to participate in various settings (Grandin and Scariano 1996; Grandin 2006). An ordinary school classroom may be too noisy, or store lights too bright. Even large family gatherings may be unworkable due to the sensory stimuli. These sensory characteristics impact PWA regarding social interaction, communication and behavior, and may often be a cause for the associated challenges we have described.

One might object to the whole quality of life argument by claiming that there is no way to measure anyone's quality of life and so this is just theoretical speculation, which furthermore is biased by a neurotypical perspective. There certainly is no direct empirical data that measures the quality of life of either PWA or neurotypical people. It also seems that those making these arguments are generally neurotypical. Though the latter part of this claim may be guilty of the *ad hominem* fallacy, it may still justify caution in evaluating the arguments. Neurotypical people (like anyone) may have a biased perspective. The key to evaluating the arguments offered here is to focus less on who is making the arguments and do our best to set aside our biases. The arguments offered in this section will be valid to the extent that the challenges identified for PWA: (1) do negatively impact their quality of life; and, (2) would not be fully accommodated in the absence of a cure.[37] So, a persuasive objection to these

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[35] Philosophers and economists employ the idea of quality of life differently than psychologists and disability service providers, but everyone needs this idea and agrees that it is important to improve people's quality of life. See Nussbaum and Sen (1993) for a background. We do not assume that anyone can precisely measure quality of life.

[36] We are not infallible judges of what will improve our lives.

[37] One might object that it is unfair to compare a perfect cure with an imperfect set of accommodations. But if I am trying to decide if *in principle* I should welcome winning a million dollars, I compare what

arguments will show either that these challenges do not negatively impact quality of life or that society is likely to start providing accommodations that will eliminate any negative impact. Of course, there is a tension between these two objections. Typically, one advocates for accommodations by arguing that a condition does negatively impact quality of life, even if not inherently so.

Another objection to this argument is that it has unfairly generalized about PWA, many of whom do not have a low quality of life. This is likely true, but the objection appears unpersuasive because the argument claims only that autism reduces the quality of life for a significant number of PWA. It is not claiming that all PWA should be cured, merely that the availability of a cure helps more than it harms.

It is clearly plausible that a cure would significantly improve many people's quality of life, either by: (1) enabling some PWA to overcome or avoid some challenges; (2) enabling families of some PWA to overcome or avoid some challenges; (3) providing other PWA (whose guardians opt not to cure) and their families with a sense of control in their lives. The assumptions underlying this are: (1) the various characteristics typical of PWA frequently impair quality of life for PWA and those around them; (2) removing these characteristics will typically increase these people's quality of life; (3) we ought to welcome things that improve people's quality of life.

Conclusion

We have found that there are plausible arguments both for and against welcoming a cure for autism. The purpose of this essay has not been to come to a definite conclusion about whether we should welcome a cure, but rather to identify the plausible arguments that underlie each position and their assumptions. The two plausible arguments against welcoming a cure both are based on the harm that will come to others. The first claims that the existence of a cure will decrease people's motivation to accommodate the special needs of PWA. The second claims that a cure would deprive society of the unique talents and perspectives of PWA. On the other side, we discussed how there was a strong initial presumption in favor of greater liberty, which provides an initial reason for welcoming a cure. We then also discussed the plausible claim that the quality of life for many people would be significantly improved by the availability of a cure for autism.

As we have mentioned previously, these are all prima facie justifications needing to be weighed against each other to come to any final conclusion.[38] So, even if we were to accept that a cure would indirectly significantly harm some people, there remains the issue of whether the benefits gained by the existence of a cure would outweigh these harms. Or, to turn this around, even if we accept that a cure would significantly benefit some people, there remains the issue of whether the indirect harms experienced by others would outweigh these benefits. Regardless of which moral theory one prefers, as long as you are willing to entertain the question of which world would be better (e.g., with or without a cure), then you must be willing to somehow put everything relevant on a scale and somehow weigh the various harms and benefits, with an open mind to what may count as a benefit or a harm. Kantians, virtue theorists, consequentialists are all others are in the same position in these questions. We should welcome a cure just in case the cure likely creates more good than it does harm (in an acceptable distribution), not just for those who have autism, but for everyone else in society as well, including families, care providers, those competing for resources, etc. Weighing such benefits and harms is notoriously complex, but we inevitably engage in it all the time. We really have no choice.

We leave it to the reader to evaluate these finding and reflect on whether the world is better with or without a cure, just as one might ask: would we welcome the news that for unknown reasons the incidence of autism had dropped dramatically (or even to zero).

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Footnote 37 continued
life is likely to be with the million, to what life is likely to be without it. In assuming a perfect cure, we are not assuming that there won't be any bad consequences, just that the cure doesn't come with bad strings attached (e.g., risky side effects to an operation).

[38] Before balancing, the arguments' assumptions must be checked. They are valid and plausible, but perhaps unsound.

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