No end to caring?
Politics and the moral riptide of human evolution

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ABSTRACT. In a recent issue of *Politics and the Life Sciences* Mark Walker presented a compelling proposition for reducing evil in the world via an interdisciplinary program he calls the "Genetic Virtue Project" (GVP). As Walker explains, the purpose of the GVP is "to discover and enhance human ethics using biotechnology genetic correlates of virtuous behavior." *PLS* subsequently published several critiques of this proposal. While most of these critiques focused on conventional doubts about the technical feasibility or the ethics of such interventions, the more fundamental concern revealed by both Walker's proposal and its critiques is in the largely unquestioned assumption that more morality is necessarily better. Human history is marked by a gradual if uneven extension of moral concern to increasingly distant others, which many take as evidence of the rationality of morality. There is substantial evidence, though, that this expansion is fundamentally biological in origin and therefore not ultimately limited by rationality. Because these expanding moral feelings feel so good to us, we are incapable of perceiving the danger from their ever-expanding focus, in particular from the sincere but increasingly maladaptive collective policies they will engender. Utilizing the philosophy of Friedrich Nietzsche as a platform, the feasibility of different natural and cultural responses to this impending crisis of caring are examined, none of which are found capable of counteracting this expanding morality. Instead, the best hope for a successful response to this dangerous expansion of caring is actually a sort of reverse GVP, in which the biological mechanisms for this unchecked moral expansion are manipulated via genetic engineering to dial back this expansion. However, the likelihood of actually implementing such an admittedly counterintuitive and controversial program within an increasingly democratized world is doubtful. Ultimately, if we are unable to overcome this betrayal by our best intentions, where does that leave us as a species?

Key words: Moral concern, altruism, maladaptive policies, Genetic Virtue Program, genetic manipulation, Nietzsche, Übermensch

> More and more it seems to me that the philosopher, being of *necessity* a man of tomorrow and the day after tomorrow, has always found himself, and *had* to find himself, in contradiction to his today. So far all these extraordinary furtherers of man whom one calls philosophers...have found their task, their hard, unwanted, inescapable task, but eventually also the greatness of their task, in being the bad conscience of their time. By applying the knife vivisectionally to the chest of the very *virtues of their time*, they betrayed what was their own secret: to know of a new greatness of man, of a new untrodden way to his enhancement.[1]

doi: 10.2990/33_1_2

In a recent issue of *Politics and the Life Sciences*, in an article titled "Enhancing genetic virtue: A project for twenty-first century humanity?" Mark Walker presents a compelling proposition for reducing evil in the world via an interdisciplinary program he calls the "Genetic Virtue Project" (GVP). As Walker explains, "the basic idea is simple enough: genes

influence human behavior so altering the genes of individuals may alter the influence genes exert on behavior."[2] Therefore, identifying and enhancing the genes associated with virtuous behavior will increase virtue. Seeking to enhance virtuous behavior has been a central focus of politics and political philosophy practically since their very beginnings. However, what is conventionally controversial in Walker's approach is his suggestion for literally "engineering" more virtuous humans not through typical means such as education, or more even more controversial means such as selective breeding or eugenics, but rather through the application of biotechnology through the intentional manipulation of human genetics to achieve these specifically moral ends.

Walker's bold proposal was followed up in a subsequent issue of *PLS* by six mostly unsympathetic responses from scholars from a variety of disciplines invited to respond to Walker's original idea, and a rejoinder from Walker himself. Some of these critiques of the GVP express the conventional doubts about the technical feasibility of the technology and the difficulty or impossibility of identifying the necessary gene-virtue linkages. Other critiques bring up the fundamental philosophical problem of identifying the appropriate conceptions of virtue and vice that would serve as the standards for these genetic manipulations (e.g., is the appropriate standard the claims of virtue ethicists, or of deontologists or consequentialists or utilitarians, and so on). Still other critiques question the overconfidence associated with such "High Modernist" planning projects, or raise the troubling specters of eugenics and of post- or transhumanism.[3]

These are all valid and worthwhile critiques, but none get at what is most compelling about a project like the GVP, or why discussion of GVP-like proposals merits so much attention. Rather this entire debate itself about the enhancement of morality from the GVP is symptomatic of an even more fundamental issue: Not just that there are differences of opinions about what is or is not moral, but that for the most part there is a largely unspoken common assumption that more morality is necessarily better. This unquestioned assumption actually presents significant dangers to humanity.

In the critiques of the GVP there are a couple of references to the possibly problematic nature of our moral tendencies, but the implications of these observations are not pursued. For example, the cell biologist Athena Andreadis in her critique of the GVP takes issue primarily with the possibility of either the uneven or the *too even* application of moral enhancement from the GVP. Andreadis observes that such a project of moral enhancement could introduce either a dangerous moral monoculture or extreme inequalities from the creation of genetically enhanced "sheep" among natural "wolves,"[4] but she otherwise does not pursue the possible ill effects from the enhancement of these moral tendencies themselves. The closest acknowledgement of the possibility—and costs—of too much empathy is in the critique by Nicholas Agar when he mentions that "one cost of greater responsiveness to moral reasons could be reduced responsiveness to nonmoral reasons." However, after broaching this notion Agar ultimately concludes only that perhaps "enhanced nonmoral powers" are what we really need to fix the morally relevant problems we have,[5] leaving the potentially disturbing implications of the possibility of too much morality unpursued.

I am not the first person to suggest that conventional morality has this paradoxical, possibly even species-threatening, aspect to it. For example, the well-known liberal commentator Christopher Hedges, in a passage on the "bitter, constant paradox" of human evil, observes that "the belief that we can achieve human perfection, that we can advance morally, is itself an evil. It provides a cover for criminality and abuse, a justification for murder. It sanctifies war, murder and torture for an unattainable absolute."[6] Likewise, the prominent neuro- and social scientist Steven Pinker in his own extensive empirical treatment of the moral progress of humankind has also noted that "the world has far too much morality." Pinker deduces this because "the human moral sense can excuse any atrocity in the minds of those who commit it, and it furnishes them with motives for acts of violence that bring them no tangible benefit." As a result, Pinker concludes, "the net contribution of the human moral sense to human well-being may well be negative."[7] It is doubtful that either Hedges or Pinker would endorse the positions I take in this paper, which makes their acknowledgement of these seemingly paradoxical issues with morality that much more compelling and useful in

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

establishing my basic argument that morality itself can pose significant dangers.

Friedrich Nietzsche, though, is perhaps the most well-known and the most outspoken critic of conventional moralities, questioning their utility and validity down to their very foundations. For example, in *On the Genealogy of Morals*, Nietzsche observes how people in general have "taken the *value* of these 'values' as given, as factual, as beyond all question...but what if the reverse were true? What if a symptom of regression were inherent in the 'good,' likewise a danger, a seduction, a poison, a narcotic...so that precisely morality was the danger of dangers?"[8] Formulating an answer to this question is a central thrust of Nietzsche's entire philosophical project, and is also the purpose of this article.

There is likely no other thinker in the Western canon who has devoted as much effort to dissecting the roots and implications of morality as Nietzsche. Because Nietzsche is one of the few thinkers to so openly and comprehensively question the very basis of conventional morality, and because Nietzsche also proposed and elaborated such a distinctive solution to the problems from conventional morality, I will refer extensively to his writings on this topic.

Nietzsche is often criticized for his operatic bombast, and for being a "literary rather than an academic philosopher,"[9] with the implication that these qualities alone are sufficient to invalidate his arguments. Instead of engaging with the sincere and serious positions Nietzsche stakes out, many critiques of Nietzsche—even by such eminent philosophers as Bertrand Russell—take the fallacious form of "I don't like what Nietzsche says, so it must be false." For example, Russell expresses his disapproval of the ideas of Nietzsche by writing "I dislike Nietzsche because he likes the contemplation of pain, because he erects conceit into a duty, because the men whom he most admires are conquerors...But," Russell continues, "I think *the ultimate argument against his philosophy*, as against any unpleasant but internally self-consistent ethic, *lies not in an appeal to facts, but in an appeal to the emotions*. Nietzsche despises universal love; I feel it the motive power to all that I desire as regards the world."[10] In other words, this emotion-based difference of opinion is enough for Russell to discredit Nietzsche's philosophical ideas.

Obviously Russell, and anyone else who feels as Russell does, is free to dislike Nietzsche and his philosophy as a matter of personal taste, but the position Russell takes is not a constructive philosophical rebuttal of the ideas of Nietzsche. A statement can be unpleasant, and still be true; just as a statement can be both agreeable and false. For a reasonable discussion to occur, especially if an argument is offered with defensible logic and support, the appropriate approach is to debate the argument on its merits; this is as true for Nietzsche as it is for the arguments I put forward in this paper. Much of what I propose here is going to be objectionable on a visceral level to many people; the best I can hope is that the positions I take and the evidence I present are treated and discussed on their merits rather than on the emotional reactions they might provoke.

However, even though I build a substantial amount of my own analysis of the dangers of human morality on the thought of Nietzsche, there are also a number of aspects of this nexus of biology, morality and politics that Nietzsche, writing at the *fin de siècle*, did not and could not have known. I incorporate this new information to both update and critique some of Nietzsche's critiques of morality and to not only propose a critique of conventional morality of my own, but also to suggest a possible solution.

As will be shown, given our evolutionary history and the deep biological origins of human morality, in particular the way our moral inclinations manifest from within as seemingly self-evident imperatives, this general lack of recognition of the potential for significant harm from our moral impulses is entirely understandable. For these same reasons, though, this moral anosognosia is increasingly dangerous as it both causes and contributes to an impending crisis of too much caring. Admittedly the mere suggestion of a crisis from too much morality itself might at first appear counterintuitive, if not patently ridiculous and obviously wrong. However, the evidence I present below strongly supports such a seemingly counterintuitive claim.

For example, consider the inexorable expansion of moral feeling and obligation towards increasingly distant others that marks human history. This trend is taken by many as evidence enough of the undeniable beneficence of both morality and the expansion of the focus of moral concern.

That both the focus and scope of human morality have gradually expanded is a conclusion I also accept. I also allow that for most of our long evolutionary history this gradual expansion of the focus of altruism has been associated with substantial benefits for the human species. However, a point of departure my argument takes is disagreement with the conclusion that both of these moral developments are therefore inherently good.

To conclude from this long history that more morality and altruism is always and necessarily better than less because it has been so in the past is an example of a "genetic fallacy."[11] This is an invalid form of argument that "mistakes the becoming of a thing for the thing which it has become."[12] Genetic fallacies also occur when the "actual history of any science, art or social institution [takes] the place of a nontemporal logical analysis of its structure."[13] The most "hateful" forms of this fallacy, in the words of historian David Fischer, are those arguments which "convert a temporal sequence into an ethical system," and in particular the conversions of "history into morality" which generally seem to favor the winners over the losers.[14] Most assertions about the benefits of the expansion of human morality are genetic fallacies in one form or another. That the expansion of these moral tendencies produced beneficial outcomes in the past is no guarantee that they will continue to produce beneficial outcomes in the present or the future. To avoid such fallacies, these moral tendencies and the expansion of these tendencies over time must be justified anew within their current contexts according to their actual effects.

In addition, and related to the conclusion that more morality is necessarily better than less, comes the *non sequitur* that because this expansion of morality has been associated with benefits for humanity in the past, it is therefore necessarily the product of rationality. Even Charles Darwin, in his seminal *Descent of Man*, writes that "as man advances in civilisation, and small tribes are united into larger communities, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the same nation, though personally unknown to him. This point being once reached, there is only an artificial barrier to prevent his sympathies extending to the men of all nations and races," and, in a point that foreshadows the central thesis of this paper, Darwin goes on to observe that "sympathy beyond the confines of man, that is humanity to the lower animals, seems to be one of the latest moral acquisitions."[15]

But what if this expansionary impulse is first biological, then emotional and social, and then rational only after the fact (i.e., that our rational "tails" are ultimately wagged by our emotional and biological "dogs"[16])? This is another claim I make, that rationality alone is inadequate as an explanation for this expansion of moral concern, and it is because of this extra-rationality that this expansion poses the significant dangers it does.

A crisis of caring?

If caring is defined as "feeling and exhibiting concern and empathy for others,"[17] and moral concern is defined as behaving in a caring manner as the realization of an internal or internalized ethical code, how can there possibly be a crisis of too much caring? This is an admittedly counterintuitive proposition, as a crisis of caring would mean that the expansion or extension of empathy is somehow producing ill effects.

To begin to answer how such a crisis could be possible, assume for the moment that I am correct about the biological and social mechanisms which interact to cause this inexorable expansion of moral concern. In other words, assume that this expansion of caring is less a rational choice but rather results from biological processes that cause the expansion of the scope of these moral sentiments at the level of the individual. As these individuals interact socially over time, the focus and scope of caring of the population as a whole will gradually expand as well, though for ultimately extra-rational or *arational* reasons. Rationality may play a role in such moral decision-making, but this decision-making itself takes place within the bounds circumscribed by the underlying biology of morality.[18] The primacy of these arational factors over our ostensibly rational choices is the basis of the crisis of caring I propose in this paper.

But how? Even supposing I am correct about the mechanisms of this expansion of moral concern, how does it manifest as a crisis of caring? Primarily—and paradoxically—through the responsiveness of representative government.

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

Democracy and morality: Too much of two good things?

One of the primary justifications of representative governments compared to authoritarian governments is that they are responsive to the will of the people. To the degree that politics is "the authoritative allocation of values,"[19] and to the degree that public policies reflect the aggregated preferences about "who gets what, when, and how,"[20] consider the collective policies that would result from such a gradually expanding arational impulse to care for increasingly distant others as for oneself. Now, consider the implications if this expansion of moral concern were ultimately unrestrained in both scope and focus and were to expand indefinitely: Instead of policies serving as rational collective responses to actual contingencies in the environment, the function of such policies would be to indulge these sincere but ultimately misguided ever-expanding moral sentiments.

An extreme example of the possible scope of the expansion of such sentiments is the movement for the rights of plants. International examples of this tendency are the promotion of human-type rights for plants by AVEPALMAS in Venezuela, [21] the formation of a political party in support of plants' rights in the Netherlands,[22] and the formal proposal by the federal government of Switzerland for the equal moral consideration of plants.[23] In the United States, articles arguing for the inclusion of plants as stakeholders in management and administrative decisions have been published in prominent business journals,[24] and the planning commission of Boulder County in Colorado has recently considered the inclusion of a plants' rights provision in its comprehensive development plan.[25] More to the point, a legal justification for the extension of rights to trees published in the *Southern California Law Review*[26] was later referred to approvingly by Supreme Court Justices Douglas, Blackmun, and Brennan in their dissenting opinion in *Sierra Club v. Morton* as according to the Justices this argument reflected "contemporary public concern" with the moral and ethical status of environmental objects such as trees.[27] Now consider again the policies that would result if this expansion of equal moral consideration to plants were to become the law of the land, and how these new policies would affect the allocation of already scarce resources.

Still, despite the enthusiasm and eminence of some of the proponents of plants' rights, most people today will likely find even the mere suggestion that plants are worthy of moral consideration a ludicrous and nonsensical proposition. Even as radical a utilitarian and as ardent a proponent of the expansion of moral concern as Peter Singer criticizes the extension of moral concern to plants as wrong-headed, irrational, and possibly dangerous.[28] However, it is worth mentioning in the context of this paper that until relatively recently in human history many of these same denouncements were also used for the suggestion that slaves are also humans or that women are also entitled to equal rights, but that eventually these once-controversial ideas became widely accepted and a matter of policy. This dynamic of the "checkered advance of the ethical frontier" is described by one distinguished philosopher of ethics, who asks his readers to "consider how slowly the circle [of personhood] has been enlarged fully to include aliens, strangers, infants, children, Negroes, Jews, slaves, women, Indians, prisoners, the elderly, the insane, and the deformed," before asserting that the salient ethical question of our time now is "whether we ought again to universalize, recognizing the intrinsic value of every ecobiotic component."[29] Given this past history, this nascent movement for the rights of plants—though a seemingly implausible example at the present time—could be the next exemplar of this arational expansion of caring to previously excluded others which eventually becomes accepted as an unquestionable moral imperative and then manifests as public policy.

This potential for policies that are increasingly maladaptive is the principal concern resulting from this crisis of caring. As a practical demonstration that such maladaptive policies can and do occur, consider the long-term trends in public policy preferences and government spending. According to a recent, comprehensive study of trends in public opinion and policy,[30] the overall trend in government spending—regardless of the ideology or rhetoric of the administration—is for consistently more spending over time. Importantly, though, the authors find that this trend is not the result of either the avarice of elected officials or institutional inertia; rather, this distinct pattern is a direct reflection of the preferences of the mass of citizens, again regardless of their self-identified ideology or rhetoric,[31]

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

and again regardless of the feasibility or rationality of ever-increasing spending.

However, there is a seeming paradox between these trends in actual government spending and ideological self-identification over time which first needs to be addressed: Since ideology has been consistently measured in opinion surveys, Americans in the aggregate have increasingly identified themselves as "conservative" (from roughly half of respondents in the early 1970s to around 65 percent by the mid-1990s), by which is meant a preference for smaller government and less government spending. If government were indeed representative, this marked increase in the conservatism of the populace would ideally be reflected in smaller government and less government spending. The authors of the study readily acknowledge this apparent incongruence between expressed preferences and actual policy outcomes as "a puzzle"[32] that on the surface seems to indicate a fundamental unresponsiveness of government.

But, when the aggregated preferences in spending of self-identified liberal, moderate, and conservative citizens are also analyzed over time, the study finds that "if advocating more domestic spending is liberal, as it certainly is in the national political dialogue, then all three groups would be classified as liberal,"[33] or that "most liberals by identification are liberals in preference [but] most conservatives by identification are *not* conservative by preference."[34] In other words, regardless of their expressed ideologies the clear majority of citizens consistently prefer more spending to less. In a world of infinite resources, this popular preference for ever-greater spending over time would not be of much concern; however, to the degree that resources are limited, if eventual bankruptcy or even system collapse are to be avoided, it is incumbent upon those charged with overseeing the system to make rational decisions to curtail such impulses.

According to the best empirical evidence available, this is not what happens. The authors just cited—and numerous others[35,36,37]—repeatedly establish that while there are cyclical fluctuations in these public preferences for more or less spending, the overall trend is for more spending over time, and that government spending patterns reflect both these short-term fluctuations and the overall trend with practically thermostatic responsiveness.[38] Thus, despite the increasing self-identified conservatism of both politicians and the public, the public actually prefers more government spending and politicians work to realize the actual rather than expressed preferences of citizens. Ultimately, the authors optimistically conclude that "the evidence supports the radical idea that the institutions of democracy actually provide the mechanisms for connecting public preferences to public policy,"[39] overlooking the dangers this unchecked responsiveness represents.

In general, then, the aggregated public gets the kinds of policies the aggregated public wants, regardless of the ultimate cost. This is also a central argument in economist Bryan Caplan's *The Myth of the Rational Voter*. Whereas most people believe that the principal problem with democracies is that they are not responsive to what voters want, the empirical reality is that in general voters get the policies they prefer. In and of itself, this responsiveness of representatives to the represented is not a problem—and is actually the primary justification for representative government. This responsiveness becomes a problem, though, if both individually and in the aggregate voters are systematically biased in their preferences, and therefore want the same misinformed and misguided policies; in this case, as Caplan writes, responsiveness to these systematic biases suggests a significant concern with democracies, namely, that "democracy fails *because* it does what voters want."[40]

According to Caplan, there is a simple logical reason for this "failure" of representative government: Because the sheer number of votes in an election make the impact of each individual vote infinitesimally small, simple economic models of the price of altruism in voting specifically predict that "people will be less selfish as voters than as consumers."[41] At the level of the individual, this misguided unselfishness would present no significant problems for society; however, when these altruistic preferences-as-votes are aggregated, instead of random differences of opinions cancelling each other out to reveal a rational signal through what in the literature is called the "Miracle of Aggregation,"[42] voting outcomes actually reveal a systematically skewed bias in policy preferences. Throughout his analysis, Caplan provides evidence of both the altruism of voters and their fundamental miscomprehension of policies that result from this altruism.

From all this evidence Caplan concludes that "irrational unselfish voters are probably more danger-

ous than irrational selfish ones [because] their irrationality points them in the wrong direction; their unselfishness keeps them marching in formation, enabling them to rapidly approach their destination,"[43] to their own detriment. As an example, Caplan discusses the "self-interested voter hypothesis"[44] that voters will vote for policies which serve their own interests, and then cites the extensive empirical evidence of the failure of this hypothesis. If voters were as rational and selfish as *homo economicus* is assumed to be, Caplan concludes, then they would move together less cohesively, and then at least an Invisible Hand type of mechanism could emerge in which the selfish actions of individuals combine to produce overall beneficial allocations.[45] Instead, what results is an unconscious and misdirected dictatorship of altruism.

Thus, contrary to both prevailing popular and academic opinion, the real danger is not that our democratic political institutions are unresponsive to popular preferences, but rather that they are surprisingly—even thermostatically[46]—responsive to those preferences, regardless of their maladaptiveness or irrationality. Furthermore, if there is an arational expansion of caring, it will only be exacerbated by the price of altruism in voting and the misguided policies it already produces. In other words, if the public increasingly prefers the allocation of limited resources to indulge their increasingly expansive focus of caring, the political system will produce just these results, regardless of the cost or effectiveness or rationality of such expenditures.

If this expansion of moral concern were a product of rationality (understood as a Weberian "practical" means-ends rationality[47,48]), then the policies resulting from the expression of these moral tendencies could at least be justified as adaptive in the sense of meeting some pragmatic purpose. However, if this expansion of caring is more the product of mindless biological processes which are then subjectively rationalized after the fact, it is difficult to justify the policies that result from such a process as rational responses to real-world contingencies.

Without the benefit of rationality, the only ways this collective political maladaptiveness will not result is if there is either some higher force that ensures congruence between good intentions and beneficial outcomes, or some other mechanism that dampens this expansion of caring prior to system collapse. It also illustrates why there must be either a rational basis for this moral expansion, or some other mechanism to insure its beneficence, as otherwise this empathic impulse would logically expand indefinitely to the point of detriment.

For those who locate the impetus for this expansion of altruism in human rationality, this rationality is both the cause and necessary limiting factor: Just as we *knew* to expand our moral obligations as we have until now, we will somehow subsequently *know* when they should be curtailed.[49] As discussed below, to the extent that our moral tendencies have a deep biological and genetic basis[50]—and therefore are felt automatically or pre-deliberatively[51]—their control or limitation by rationality is less and less likely. This all prompts two questions: If the expansion of these inclinations is not limited by rationality, then by what is it limited? And then, what are the repercussions if this expansion of the focus of caring is not limited?

In the end, dealing with this impending crisis of caring is akin to other practically insoluble grand-scale collective action problems such as responding to global climate change.[52,53] However, I assert this problem of unchecked moral expansion is even more insidious and difficult a problem. Due to the deep biological substrate of our moral sentiments which produces their characteristic feeling of self-evident inescapability, the wrong policies (in the sense of being indulgent and dysfunctional) will feel right, just as the right policies (in the sense of being the most appropriate, functional and adaptive) will necessarily feel wrong. By the same token, though, inexorable need not mean irreversible and arational need not mean not manipulable. The identification of this biogenetic basis and the other mechanisms of the expansion of moral concern actually suggests a couple of possibilities for averting this crisis of caring: one, provocatively described by Nietzsche as a result of natural evolutionary forces; the other via biotechnology such as recommended by the GVP, though not quite as prescribed by Walker. Both are addressed below.

The (very real) illusion of moral progress

One point on which Walker, his critics, and most people generally agree, but which is my first point of departure for asserting an impending crisis of too much

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

caring, is the notion of moral progress. There is significant empirical evidence that human history is marked by a sweeping, if gradual and uneven, movement towards greater and deeper moral concern for increasingly distant others. However, that this expansion of moral concern has been associated with significant declines in both individual and collective violence, as well as beneficial increases in other morally relevant domains, has lead most to misinterpret or misdiagnose the underlying mechanisms for such an expansion. Because of these beneficial correlations, most commentators understandably though mistakenly attribute this moral progress to the inherent goodness of these moral tendencies or to some form of either individual, collective, or institutional rationality. Instead, I maintain that the vector of this inexorable tendency actually reveals the arational biological and social mechanisms by which moral "progress" is actually realized—and why it is likely leading humanity towards a possible catastrophe of too much caring.

Better in spite of ourselves?

At the close of the 18th century, the German philosopher Immanuel Kant published two landmark essays in which he posited that after passing through a "hell of evils" humankind will eventually evolve into a cosmopolitan "universal civil society" based on a common global morality.[54] In addition, Kant wrote, in the process of this moral convergence every nation-state will also come to share the same republican political structures and economic interests, thereby ushering in a "perpetual peace" around the globe.[55]

However, at the same time Kant also famously assumed that "the human being (even the best) is evil,"[56] that there is a "universal propensity to 'wrongdoing' [that is] so very deeply ingrained in human nature that it corrupts our power of choice at its very root,"[57] and that this innately evil human nature is not malleable—whence issues Kant's famous dictum that "out of the crooked timber of humanity, nothing straight can be fashioned."[58]

While these two positions—the ultimate moral progression of humanity and the innate immorality of humans—might seem to be fundamental contradictions, Kant rather ingeniously reconciles the two positions in an intriguing and powerful way that leads him to predict the inevitable emergence of ultimate "harmony among men through their discord, even against their wills."[59]

As writes one commentator, the gist of Kant's reconciliation of the seemingly paradoxical moral progress of humanity with the lack of moral progression of humans is that:

> While individuals have remained the same over time, the species as a whole is making moral progress. Individuals have the same *challenges* as always, of submitting their wills to moral law, but the species as a whole gradually comes to embody the moral law through its institutions, namely positive law. Morality is reason internalized. Law is reason externalized.[60]

In other words, apart from any inherent goodness of humans, it is the "stickiness" of human institutions that will eventually ratchet up our moral behavior, as the institutions created and laws passed during and after the worst of times will persist even as humans tend to forget the lessons of the past and attempt to revert back to their former behaviors. These persistent laws and institutions will then enforce proper behaviors even as the natural immoral tendencies of humans resurface. Some of the implications of this amoral realization of morality will be addressed later; nevertheless, from this theoretical reasoning, and despite all the evidence to the contrary, Kant predicted the inevitable political and moral convergence of humanity.

As implausible as Kant's original predictions may have seemed at the time he penned them—especially given the almost constant stream of local and global bloodbaths that occurred during the intervening generations—two hundred years later the political theorist Francis Fukuyama declared their impending culmination through his identification of an "end of History," by which he meant an end to ideological history. In a short article published in the summer of 1989, most notably *before* the collapse of the Soviet Union, Fukuyama asserted that once the Soviet Union and its forms of politico-economic organization inevitably collapsed, then humanity will have finally reached "the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government."

Fukuyama takes care to allow that "this is not to say that there will no longer be events to fill the pages of *Foreign Affairs*' yearly summaries of international

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

relations, for the victory of liberalism has occurred primarily in the realm of ideas or consciousness and is as yet incomplete in the real or material world." Instead, he asserts that, "there are powerful reasons for believing that [economic and political liberalism] is the ideal that will govern the material world in the long run."[61] In his subsequent book-length treatment of this topic, Fukuyama proposes that this gradual trend reveals how "the *whole scope of history*. . .constitutes further evidence that there is a fundamental process at work that dictates a common evolutionary pattern for all human societies—in short, something like a Universal History of mankind in the direction of liberal democracy."[62] Other value systems, ideologies and "crackpot messiahs" may emerge and reemerge on the international scene, just as capitalism and democracy will continue to generate significant problems of their own, but (as per Kant) the end result will be that all societies will eventually transition to capitalism and democracy.[63]

And Fukuyama has not been alone in this refrain. Many others have trumpeted the gradual emergence of a truly cosmopolitan world from the adoption of liberal social institutions among countries around the globe, marshaling an impressive revue of evidence and examples.

For example, Samuel Huntington has identified three successive post-World War II "waves" of democratization, or identifiable historical moments in which more regimes around the world transitioned to democracy than to nondemocracy.[64] This is particularly important in Kantian terms, as others have identified the spread of democratic regimes with a "democratic peace," in that well-established liberal democracies have been empirically shown to not ever go to war against each other and "to rarely fight each other even at low levels of lethal violence" (i.e., the more democracies there are, the less the probability of international conflict).[65] Similar to Kant's observation about retrenchment, though, Huntington also identifies waves of de-democratization following the two previous waves; but also in keeping with Kant's notion of an institutional "ratchet," while in each such reversal the number of democracies decreased significantly, each wave still left more democracies than had existed prior to the previous wave. Notably, some have concluded that the third wave of democratization has yet to reverse itself, or even doubt that it will reverse to any significant extent because "publics have shown no appetite for a return to authoritarian rule of any kind [as] culturally, democracy remains a valued goal," and "no antidemocratic ideology with global appeal has emerged to challenge the continued global ideological hegemony of democracy as a principle and formal structure of government."[66] Even now, in particular with the recent events of the Arab Spring, a fourth wave is already being proposed.[67] Thus, at least at the level of countries and governmental institutions, the ironic optimism of Kant has been at least partially vindicated.

In addition, compelling arguments for the emergence of cosmopolitan liberal ideals on a more personal level have been offered. The relatively recent "invention" of the concept of self-evident human rights has been linked with the gradual spread of a historically unique sense of empathy, which is itself posited as a function of the spread of literacy at a specific historical moment around the turn of the 18th century.[68,69,70] Some have gone so far as to assert that, "reading accounts of torture or epistolary novels had physical effects that translated into brain changes [which] created new individual experiences (empathy), which in turn made possible new social and political concepts (human rights)."[71] Thus, as literacy spread so did empathy, and therefore practices like torture as a routine part of the judicial process and gruesome spectacles like public executions were gradually phased out of acceptable practice as the scope of moral concern expanded continually outwards.

Likewise, Kwame Appiah, in his exegesis of the ethos of cosmopolitanism first defines its guiding principle as "the one truth we [cosmopolitans] hold to, however, is that every human being has obligations to every other. Everybody matters: that is our central idea."[72] In a subsequent book Appiah details the effects of the spread of such values around the world through his analysis of "moral revolutions" in four specific cultural practices—dueling, foot-binding, slavery, and "honor" killings, which despite their cruelty were once widely accepted and even exalted but eventually perceived as morally repellent.[73] At the same time, Steven Pinker, in his comprehensive theoretical and empirical analysis of the moral trajectory of humanity, likewise offers voluminous evidence of remarkable declines in violence at all levels of human interaction from the international (war, principally, and casualties

from war) to the interpersonal (homicides, rapes, domestic violence, etc.), commensurate with the spread of liberal ideals and institutions.

This is compelling evidence, but on its own it is more correlative than causal. As to *how* such sweeping changes could be caused, and in a point that pertains more directly to the GVP, Pinker investigates "the possibility that in recent history *Homo sapiens* has literally evolved to become less violent in the biologist's technical sense of a change in our genome."[74] In the process Pinker identifies a number of plausible biological pathways through which our moral inclinations could be subject to the pressures of "rapid natural selection,"[75] but ultimately concludes that a gene-level change is an unlikely and unnecessary explanation for such swift changes in innate human nature, in part "because they unfolded on time scales that are too rapid to be explained by natural selection, even with the new understanding of how recently it has acted."[76]

Again, it is not that there are no viable genetic means through which a project like the GVP could be enacted, it is just that there has not been time enough in the relatively brief window of modern human history for natural selection to realize the relevant biological changes needed to drive these changes in our basic human nature. Ultimately (and quite similar to Kant), Pinker concludes that, "human nature, in the sense of the cognitive and emotional inventory of our species, has been constant over the ten-thousand year window in which declines in violence are visible,"[77] but that these extensions of moral concern have occurred anyway. As a result, other causes must be sought. Similar to Kant, Appiah and others, to account for this remarkable change in morally relevant behaviors Pinker also ultimately invokes exogenous causes (i.e., environmental and institutional changes), and true to Kantian form Pinker identifies the "civilizing process of government" and the spread of "gentle commerce" as being instrumental in fomenting and fixing these changes.

However, Pinker identifies an additional cause that Kant does not in his reference to a coextensive "expanding circle" of empathy, which he also attributes to the aforementioned spread of literacy and cosmopolitanism. This seems to contradict the assumption of a more or less fixed fundamental human nature, as such an expansion of empathy emanates from within the individual and thus likely requires at least some change in the basic biological substrate for its expression. If these moral qualities have changed because of changes over time in these underlying physical properties, this would seem to contradict Pinker's and Kant's theses that fundamental human nature has not appreciably changed over the duration of human civilization. The expansion of empathy within an unchanging fundamental (i.e., genetic) human nature can be justified, but only if the biological means for the expansion of this empathy were already in place. By this I mean not that the genetic mechanisms for empathy themselves change to permit the expansion of empathy, which Pinker demonstrates to his and my satisfaction is not the case. Rather, it is that the mechanisms for this expansion of empathy are genetically inherited.

Regardless, from my reading of Pinker a biologically based expansionary mechanism of morality is not what he proposes; instead, like so many others, he ultimately piggybacks this expansion of empathy onto an inherent logic of rationality. To the contrary, I assert that it is an arational, biologically-based mechanism that best explains the expansion of caring. Although Pinker ranks this expansion of empathy as only one of many contributors to the precipitous decline in violence, and that it is actually derivative of other developments such as literacy, it is my contention that an endogenous, individual-level, biology based change is the root of all the other changes with which moral progress is associated. Without change in this one factor none of these other institutional developments would have been likely to occur. As notes Fukuyama, "liberal ideas have no force independent of the human actors who put them into effect."[78] Consider, for example, if literacy increased in the absence of such an underlying change in the ability to feel certain sentiments. Would these new readers have still selected to read the epistolary novels that appealed to these more empathetic inclinations, or would they have continued to opt for more sanguinary or blood-thirsty fare? To understand the why and how of the vector of this change, the underlying evolutionary dynamics and deep biological roots of this process need to be elaborated.

The circle of caring

In Pinker's invocation of this "expanding circle of caring," he refers to the moral philosopher Peter Singer

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

as the original source for this idea.[79] In *The Expanding Circle*, first published in 1981 and elaborated in 2011,[80] Singer asserts that our current moral tendencies originated as altruism, or other-regarding behavior, in the evolutionary lineage of mammals.[81] According to Singer, this altruism began as care for immediate offspring. Over millions of years, as species increasingly diverged and specialized, the capacity to act altruistically towards increasingly distant others gradually expanded to include concern for kin in small groups, then to non-kin in small groups. Then, as a result of the unique coevolution of human sociality and our capacity for rationality, outwards to others in more distant communities, and so on.

However, while admitting a fundamental biological origin for such tendencies, Singer ultimately dissociates this extension of empathy from our biology. Instead, Singer identifies this expansion of human moral sentiments as a rational principle of action, as the gradual embodiment of what he refers to as the undeniable logic of the "equal consideration of interests."[82] This principle holds that the only way to ultimately and consistently convince others of the justice of one's own claims is to treat one's own interests and the interests of one's own family and community as no more or less important than the claims of all other moral agents. Only in this way, Singer asserts, will others treat your judgments about their claims as being deliberated upon neutrally, if not fairly, just as this is the only way you would accept the moral deliberations of others in regards to your own claims.

In support of his initial, and at the time largely theoretical, assertion about this expanding circle of empathy, in the updated version of *The Expanding Circle* Singer reviews some of the empirical research produced during the intervening decades that validates both his concept of the expanding circle of caring, and the emergence of cosmopolitanism identified by so many others. Singer compares the moral trajectory that results from beginning to reason in this way to an escalator, writing that "once we take the first step, the distance to be traveled is independent of our will and we cannot know in advance where we shall end."[83]

On this point, that the process of the expansion of moral concern is inexorable and currently beyond our control, I partially agree; what Singer fundamentally misdiagnoses, however, are the mechanisms and the impetuses for this vector which he locates in the nature of reasoning itself, which "is inherently expansionist [and] seeks universal application."[84] Pinker also identifies the inherent universality of reason as a "momentous realization, because it defines a place for morality."[85] By this is meant that the rational recognition of the interchangeability of perspectives is the only objective basis for morality, and therefore that the neutrality of the equal consideration of interests is both the cause and the dampening mechanism for an inherently expansionary tendency.[86]

Even so, there are important differences between the rational moralities of Singer and Pinker. For example, while Singer emphasizes the cool application of reason as the mainspring of the expansion of morality, Pinker uses much of the same evidence as Singer as proof that it is "soft-hearted empathy" more than "hard-headed reason" that expands this empathic circle outward, although Pinker also ultimately resorts to rationality as the limiting factor.[87] Pinker also repeatedly emphasizes that "the expanding circle and the escalator of reason are powered by some of the same exogenous causes, particularly literacy, cosmopolitanism, and education."[88] While Pinker is correct that the expanding circle is driven by empathy, or rather that the circle is empathy itself, in prioritizing these exogenous causes he misidentifies these correlates as causes. Pinker's emphasis on empathy over rationality is much closer to correct than Singer's emphasis on logic, but as Pinker also ultimately resorts to a universalizing rationality to account for this expansionary dynamic he ultimately ends up with Singer.

However, in granting the validity of the evidence that moral concern for others has gradually expanded and been adopted as the norm by more and more people over time, it is also the case that rationality based explanations such as Singer's and Pinker's are not the only or even the best possible explanation for this convergence of values. There is yet another way to put together this chain of evidence from biology, psychology and anthropology that calls into question the claims of Kant, Pinker, Singer and so many others that this expansion of concern emanates from the exercise of human reason, or even from human intention at all. From the totality of this evidence, it is my contention that the roots of this phenomena have deep biological origins that coevolved with human cultures. Paradoxically, however, this inexorable expansion of human

morality towards greater and greater concern for increasingly distant others actually masks a possible self-inflicted catastrophe for humanity, the tragedy of too much caring.

The moral hormones

The next step in establishing the inexorability of this crisis of caring involves answering one of the critiques of Walker's GVP, that "just as there are no genes for intelligence...there are no genes for virtue or even inclination for it" that can be manipulated by a GVP-type program.[89] I answer this criticism by first agreeing in principle with such claims that there are no specific genetic correlates for specific virtuous behaviors. On the other hand, it is also the case that "morality originates in the neurobiology of attachment and bonding"[90] that is unique to the mammalian line of descent. This neurobiological link means there must also be genetic bases for caring inherited via our mammalian evolution, which at least in theory could be so manipulated and engineered, thus these critiques of the GVP must be at the very least incomplete.

In particular, I begin from the work of neuroethicist Patricia Churchland in which she naturalizes Singer's expanding circle of caring through her analysis of the evolution of mammalian endocrinological reward systems. However, while Churchland is able to convincingly illustrate how it is that who or what we care about is driven (though not determined) largely by these evolved biological processes, she does not offer an explanation as to why this expansion extends past the contiguous members of small groups. I provide such an explanation, and in the process illustrate how these deep biological and genetic mechanisms for morality interact with the social evolution of humans to result in the particular vector of moral concern which is pushing us towards a coming catastrophe.

On the surface, that there are no genes for virtuous behavior which could be manipulated via a GVP-type process is an obvious and obviously correct point. As explained by Andreadis in her critique of the GVP, this is because genes don't encode complex behaviors, they just encode proteins at a very low level stage in an incredibly complex hierarchical network of biological and social processes that eventually culminates in different behaviors.[91] However, to suggest that there is not a genetic basis for virtuous behavior is akin to suggesting there is not a genetic basis for a complex behavior like driving a car, which is obviously but trivially true. Given how natural selection works, there cannot be a specific genetic basis for driving, which is a very recent and very particular *token* of behavior; yet there are still genetic bases for the *types* of behavior involved in driving, such as vision, coordination, balance, and so on. Tokens of behavior cannot be targets of selection because there are too many degrees of freedom in their implementations and effects. Only types of behavior that endure over a long enough timespan so that their causes and effects can be routinized become evolutionarily encoded in gene networks.

A morally relevant example of this distinction is given by Churchland in her book *Braintrust* of white-faced capuchin monkeys at the Lomas Barbudal Biological Reserve in Costa Rica. Members of the troop cooperated to rescue a juvenile from a boa constrictor.[92] Some members of the group attacked the snake in different ways, while others worked to free the juvenile from the coils of the snake, so that these self-risking and altruistic behaviors were ultimately effective at rescuing the young individual. Now, these specific rescuing behaviors could not have been selected for in terms of natural selection to be genetically encoded. But endocrinologically strong caring, which would motivate behaviors specific to the context of widely varying situations such as rescuing a groupmate from a specific snake in a specific context, is the type of behavior on which natural selection can operate.

Where do such altruistic impulses come from? Similar to Singer, in her account of human morality Churchland also identifies the origin of caring and the expansion of our caring circles in our mammalian evolutionary history. She diverges importantly from Singer in how far back chronologically and how deep biologically she goes to account for the origin of empathy and in her emphasis on its underlying mechanisms, in that altruism didn't start as care for offspring, it started as the basic survival instinct—as care for oneself. In particular, Churchland begins from the point of view that animals incapable of preserving themselves are likewise incapable of passing along their genes. "From an evolutionary perspective, the general point is straightforward: self-caring is selected over self-neglect."[93]

From this emphasis on the evolutionarily logical necessity of individual survival, Churchland highlights

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

the role of the brain and the nervous systems in the process of homeostasis, or in monitoring the internal states of an organism such as body temperature, levels of carbon dioxide, blood pressure, glucose levels, and so on, and in maintaining these internal states within the ranges necessary for survival and comfort relative to the external conditions. The critical connection with the endocrinological system is that when one of these monitoring systems registers a change in its target parameters, it generates motivational emotions via hormone releases that prompt the appropriate behavioral responses (e.g., the sympathetic systems that prepare the body for "fight or flight" in the presence of a possible threat, and the parasympathetic systems that return the body back to the less energetic "rest and digest" states). It is the combined functioning of such systems and the boundaries of the phenomena they monitor that constitutes what Churchland calls "the golden circle of me" that is the first focus of all this caring.

The question then becomes how does caring for self become caring for others? Basically, there is an "expansion of the domain where the brain manages well-being," or an "expansion of me-ness" in that the boundaries of the "homeostatic ambit" of these self-caring systems expand to include external others as literal extensions of ourselves—again, first to immediate offspring and then gradually outwards to include increasingly distant others.[94] As Churchland writes, "the core idea is that in mammals, evolutionary adjustments in the emotional, endocrine, stress, and reward/punishment systems effectively extend the range of individuals whose well-being the animal cares about, at least for a certain set of survival-relevant behaviors... It is as though the golden circle of *me* expands to include *my* helpless pups."[95] In other words, those with the genetic predisposition to expand self-care to their young helped to insure the differential success of their young, which in turn propagated the genetic mechanisms for this expansion of self-caring, which then expanded to include increasingly distant others in an initially virtuous circle of the expansion of altruistic concern.

The importance of the emergence of altruism and morality through the evolutionary lineage of mammals cannot be emphasized enough. Observation of and experimentation with both non-human mammals and humans have shown social recognition, caring, trust and other morally relevant behaviors to be regulated to a significant—often dose-dependent—degree by the endocrinological systems unique to mammals, and the oxytocin (OXT) and vasopressin (AVP) release/reward centers in particular (oxytocin and vasopressin are hormones that differ chemically by only two amino acids). Thus in mammals "the bonding and attachment is regulated, as far as we know, mainly by the density of receptors for vasopressin in the ventral paladum and for oxytocin in the nucleus accumbens, and if you change those things, you change the behavior."[96] As observes Churchland, "the big change that gives you caring for others comes with the mammalian brain, and that smaller changes can give you rather different forms of social behavior."

As social cognition is the basis of social behaviors, and therefore fundamentally related to altruism among animals and morality for humans, those factors that affect social cognition can also be assumed to be relevant to morality. In regards to non-human mammals, there are a number of receptor antagonism and gene knock-out studies that demonstrate the importance of OXT and AVP in social recognition of all kinds: parent-offspring relationships, pair-bonding, dominance-subordinance hierarchies, courtship and aggression, and so on.[97,98] For example, when the AVP receptor was blocked in experiments with male mice,[99] or when mice were bred with a null mutation in the OXT gene,[100] or an OXT antagonist was introduced into otherwise normal mice,[101] the mice showed "a complete disruption of social recognition." In all these experiments, though, social recognition was restored almost immediately after the injection of oxytocin directly into the medial amygdala. This immediacy of effect clearly demonstrates the critical role of vasopressin and oxytocin "in the neural processing of social stimuli required for complex social behavior."[102]

Similar effects were observed in experiments with two closely related species of rodents—prairie voles, which form lifelong pair bonds, are biparental, and show high levels of social interest; and meadow voles, which do not pair bond, are not biparental, and are socially indifferent—which also demonstrated dose-dependent effects of vasopressin on behavior. First, it was established that these species differences in social structure were a function of the pattern and density of vasopressin receptors in the brain,[103] and that these

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

different patterns and densities of vasopressin receptors are regulated by identifiable differences in DNA sequences.[104] Thus there is a clear genetic correlate for these differences in what in humans would be considered fundamentally moral behaviors. Then in experiments it was found that the injection of 0.1 ng of AVP, but not 0.01 ng or 0.3 ng of AVP, led almost immediately to paternal behavior even in previously non-paternal male meadow voles and that the introduction of AVP antagonists inhibited paternal behaviors even in previously paternal male prairie voles.[105,106]

How does this apply to human morality, especially if as suggested by Andreadis in her critique of the GVP that "rodent studies, in particular, are useless in illuminating causes of human behavior, since radically different foundations drive it in the respective species?"[107] While caution and restraint are clearly needed in attributing similarities in cause and effect in humans from animal studies like these, Andreadis' claims that rodent studies are "useless" seems hyperbolic. To wit, in his defense of the GVP Walker identifies the GVP as a proper subset of behavioral genetics, which is a well-entrenched academic discipline that incorporates animal studies as an integral part of its efforts to explain, predict, and influence behavior in terms of genetics; thus, as Walker concludes, "if the science of the GVP is built on 'terminally wobbly foundations,' then so too is much of behavioral genetics."[108]

In addition, there are a number of strong confirmations of the valid application of results from animal studies to humans, specifically in regards to the biological and genetic mechanisms for morally relevant behaviors. For example, in terms of the identification of the specific DNA sequences that regulate AVP receptor densities which account for the differences in rodent behavior mentioned above, subsequent research has found that "such a gene regulatory mechanism may occur in humans as well" as humans have notably similar gene sequences.[109] Thus, it is plausible that these similar DNA sequences also influence vasopressin receptor density in some human brain areas as well, with morally relevant behavioral consequences. For example, similar allelic variation in human AVP receptor density has previously been associated with behavioral dysfunctions such as autism,[110,111] which has been described clinically as an "empathy disorder."[112] In addition, as catalogued in an extensive review of the literature published in the journal *Pharmaceuticals*, precisely because so many of the biological pathways between humans and other mammals are so similar, evidence about the effects of OXT in animal studies is promising enough to suggest a "potential therapeutic benefit" of OXT for treatment of manic depressive disorder in humans.[113] This all strongly suggests there is a much closer connection between human and non-human animal endocrinological systems and behavior than is allowed by Andreadis.

By inference from these animal studies, one might predict that levels of cooperation and trust in humans are also sensitive to OXT levels. In her book *Braintrust*, Churchland reviews a number of direct experiments with humans that support the claim that OXT is also influential in human behavior in morally relevant ways.[114] For instance, in one experiment the neuroeconomist Michael Kosfeld had pairs of participants isolated from each other play four rounds of a game called "Trust" in which one partner (the investor) could decide whether to keep or give the other partner (the trustee) an initial amount of actual money, the amount of which is then tripled by the experimenter. Then it is up to the trustee to decide how much of this new amount to send back to the investor (the balance of which the trustee pockets), and the next round begins—so that the more the investor gives and the trustee returns to the investor each round the more can be earned by both in the final round. What Kosfeld found was that investors who received intranasal shots of OXT sent money to the trustee on average 24 percent more often than did controls (45 percent of the time versus 21 percent), and also sent 17 percent more money (as long as they feel their partner is a human; significantly, this effect disappears when the OXT-enhanced investor believes they are playing with a computer program).[115]

In another set of experiments focusing more on in-group and out-group cooperation, participants could confidentially keep the money they were given, contribute a sum to a within-group pool, or contribute to another within-group pool that actually subtracted money from out-group members. Researchers found that 52 percent of those in the control groups behaved egoistically (i.e., usually kept their allotment), 20 percent contributed to the in-group pool, and 28 percent chose to also spite the out-group. On the other

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

hand, among those who received intranasal OXT, only 17 percent were egoists, while 58 percent were in-group cooperators, but the proportion of spiteful participants at 25 percent was more or less the same as the control group.[116]

For all the support these experiments and others[117,118,119] give to Churchland's basic thesis that human morality originates in the mammalian neurobiology of attachment via the oxytocin-vasopressin network, and that therefore there are means by which virtue could be enhanced via a project like the GVP, there are a couple of particularly relevant caveats. For example, in another similarly structured experiment that combined intranasal, double-blind, administration of oxytocin with magnetic resonance brain imaging, the researchers found that "subjects in the oxytocin group show no change in their trusting behavior after they learned that their trust had been breached several times while subjects receiving placebo decrease their trust."[120] In other words, in the realization of one of the original critiques of the GVP, those who had their virtue artificially augmented became enhanced "sheep" among natural "wolves."[121] This result is also important as an indication of the potential maladaptiveness of our ancient endocrinological reward system, in that depending on the context more morality is not necessarily or always better.

Furthermore, as in the set of experiments mentioned before that incorporated in-group/out-group distinctions, it is noteworthy that the morally relevant effects of OXT in this case were manifest as enhanced cooperation within the group, but with no effect on attitudes towards those perceived as outsiders.[122] Experiments based on implicit associations or automatic reactions also show that oxytocin enhances within-group bias by contributing to both in-group favoritism and out-group disparagement. These group discrimination effects, manifest through manipulation of the endocrinological system, suggest that "the human brain may have evolved to sustain ethnocentrism" as an adaptive mechanism to sustain group cohesion and restrict access to limited resources.[123]

Given the evolutionary history of the mammalian OXT/AVP endocrinological system, and its particular role in social cognition (i.e., Whom do I trust? For whom do I feel concern and for whom do I not?), it appears a primary evolutionarily adaptive function of these endocrinologically-based altruistic inclinations was in delineating those who are worthy of empathy. In other words, the expansion of these tendencies did not result so much from the gradual realization of the abstract logical principle of equal consideration but rather from the evolutionarily adaptive benefits of making of in-group/out-group distinctions, which is significantly different justification for altruism than that suggested by our contemporary, more expansive view of morality.

In the mammalian line of descent, these in-group designations first expanded from self-care to care for immediate offspring. The benefits from this expansion of caring for the survival of offspring were such that the genetic mechanisms for the expansion of caring were transmitted to subsequent generations via the enhanced survival rates of cared for young. These benefits for survival continued as the altruistic focus expanded from kin to non-kin in small groups. (In other words, those groups whose members felt this enhanced concern for each other were more likely to get more offspring to reproductive age, such that the group itself becomes the focus of natural selection and not just the individual.[124,125]) This process continued through the different speciations in the mammalian line all the way through to early hominids and then modern humans.

However, there is no logical necessity that ensures these benefits from the expansion of caring across any scale as asserted by Pinker and Singer and their universal logic of the equal consideration of interests; all that is known for certain is that over time this expansion has occurred. The main question in this paper, though, is that as these OXT/AVP-influenced in-group designations have expanded as they have so far, what if they continue to expand *indefinitely* (through genetic programming or other human interventions) so that everyone and everything is eventually included within the group? This question will be addressed in more depth later.

However, there is still one significant issue about the mechanisms for this expansion of concern that remains to be resolved. While Churchland is able to convincingly illustrate the biological mechanisms for how it is that who or what we care about is a product of evolved biological processes, neither she nor anyone else of who I am aware offers a natural explanation as to how or why this expansion occurs—only that it does. To fill this gap, and to begin to account for the particular

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

vector of human moral "progress" and its effects, it is my assertion that this expansion of caring is a result first of these genetically-inherited biological mechanisms; second, of the stability and security of the environments in which social animals are located; and third, of the ability for high sociality and abstract conceptualization. This third step is why moral concern has expanded as it has only for humans (in other words, why chimpanzees have not also systematically expanded their concern towards increasingly distant chimpanzees, and then other species, and then even plants).

This third step is also related to the empathic or moral continuum that follows the mammalian evolutionary line of descent. Species within this evolutionary line exhibit altruistic behaviors to an increasing degree as one ascends the evolutionary tree. As Singer notes, "reciprocal altruism is most common among, and perhaps limited to, birds and mammals," with the clearest cases coming from highly intelligent social animals at the "top" of the line.[126] Both mammals (synapsids) and birds, reptiles and crocodiles (sauropsids) exhibit some form of mother-caring behavior, but amphibians do not. This places the origin of the first expansion of the caring circle at the divergence of amniotes (the adaptation of laying eggs on land rather than water) from amphibians around 350 million years ago, with increasingly greater reciprocity as one moves up the evolutionary tree. The result is that birds tend to show greater responsiveness to "the behavioral states of conspecifics" than reptiles or amphibians, rats more than birds, monkeys more than rats, gorillas more than monkeys, chimps and bonobos more than gorillas, and humans more than chimps.[127,128]

Even within human evolution, from hominids to modern humans, there is suggestive evidence of an evolutionary empathic continuum. In the archaeological record, larger cranial capacity is highly correlated with increasingly larger group sizes over time,[129,130] which also correlates with the expansion of the focus of caring, ultimately culminating in contemporary human moral standards. In other words, the cranial capacities of hominids increased apace with the size of their social networks. However, at some point cranium sizes stopped increasing while group sizes continued to exponentially increase and the focus of moral concern continued to expand outward. This inflection point—the disconnection between increases in cranial capacities and group sizes—is a good candidate for the beginning of the maladaptiveness of previously adaptive empathy.

Ultimately, as the focus of endocrinologically based moral concern has slowly expanded to include increasingly distant and then abstract others it has resulted in new "objective" ethical standards for modern humans in the sense of these sentiments being felt with the seeming inescapability that is characteristic of moral imperatives.[131] These new ethics are then subjectively rationalized after the fact to account for the seeming inevitability of these expansions of the focus of caring.[132,133]

In other words, this expansion of our circles of caring is primarily a function of the biological propensity for such caring to expand when combined with the relative stability of the environment and ability for higher sociality and abstract thought. The differences in empathy both between animal species and along the evolutionary empathic continuum is why I locate the impetus behind this moral expansion more in biological than rational processes. The expansion of caring as a rational decision or social norm does not adequately account for this long evolutionary history. As other animal species are also capable of altruistic and even moral behaviors,[134] the expansion also means that at some level non-human animals would have to be as capable as humans in realizing the logic of equal consideration of interest, and in the process similarly capable of adjudicating claims of justice and fairness. If this is the argument being asserted in favor of the expansion of caring as a rational or logical decision, it requires an account of this cognitive ability of non-humans that has not yet been provided.

Putting it all together, then, as the environments within which altruistically capable agents interact become increasingly stabilized and secure over time, such that the survival and safety of the object of care is increasingly assured and routinized, the endocrinological mechanisms that reinforce this caring for others-as-oneself then gradually nudges the boundaries of this "golden circle" of caring outwards towards increasingly distant and then, depending on cognitive capacity, increasingly abstract or symbolic others whose circumstances are perceived as less secure.

In our contemporary times, this dynamic manifests in the conception of human rights and its gradual application to wider circles of previously non-human

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

others (i.e., to foreigners, barbarians, slaves, and other outsiders whose humanity was disputed or denied for centuries, and then to non-human animals, to non-animals, and so on) coincidental with the unheralded spread of material prosperity associated with the Industrial Revolution.[135,136] This same dynamic is further manifest in the quantifiable shift from materialist values (defined as an overriding concern with one's own physical and economic security) to postmaterialist values (defined as an overriding concern with more abstract concepts such as freedom, self-expression, and quality of life both for oneself and for others) coincidental with the rise in material security during the transition from industrial to postindustrial economies.[137] Despite the seemingly self-evident benefits from this moral expansion, because this ever-expanding process of inclusion is primarily a function of the interaction between biological capacity, environmental stability, and cultural opportunity—and not the product of a universal logic or rational decision-making—this process is slowly pulling humans as a species farther away from the safety of the shore and out towards dangerous (ironically, over-protective) waters.

This is not to say that this gradual expansion of moral concern must be or is always maladaptive. The accumulated evidence is pretty clear that during mammalian and early human evolution this expansion of caring for others was necessary for survival—not only in the enhanced care for offspring mentioned before, but also in the "major evolutionary transitions" from selection operating on the fitness of individuals to the fitness of groups.[138,139,140] The expansion of morally relevant tendencies between the members of a group has been an integral factor in major evolutionary transitions at every scale, from the emergence of governments all the way down to the evolution of cells from unicellular to multicellular organisms.[141,142] However, it is also the case that for most of this time this expansion of caring in the evolution of humans was limited by the physical constraints of both the perpetually insecure environment of early humans and the relative dearth of opportunities for early humans to extend this caring to increasingly distant others, as their exposure to other groups was limited by direct competition or distance. But with the gradual removal of these barriers to expansion, and the commensurate increases in social and cognitive complexity, the scope of empathy expanded accordingly; even so, there is no guarantee these initial benefits from morality will still obtain in a much more complex and crowded world.

To summarize up to this point: First, there is a deep biological and evolutionary basis for human morality. Second, there has been an inexorable expansion of caring as a result of the interaction of this biological substrate with human social development, and not as the inevitable result of a universal logical or rational imperative. Third, our contemporary standards of human morality are the result of this gradual expansion of moral concern. Finally, this inexorable expansion of moral concern is ongoing and poses significant challenges for humanity, in particular through the arational and maladaptive policies that result from this arational expansion of caring. Now, assuming the preceding is correct, can this impending crisis be averted or even mitigated—and, if so, how?

Nietzsche to the rescue?

What I propose, then, is that there is a hormetic inflection point in the relation between the size and complexity of human organization and the adaptiveness of the expansion of moral concern, beyond which the benefits begin to turn against us (and I would say that we have probably already passed this point, but due to the nature of these moral feelings we are incapable of recognizing the dangers they represent).

Again, I am not the first to suggest such a thing. More than a century ago Friedrich Nietzsche, in his own thoughts on the prejudices of morality, presciently speculated how in the future a "universal love" of everyone by everyone as the product of some "uncontrollable drive" could actually result in a "painful and ludicrous state of affairs the like of which the earth has never yet seen—everyone worshipped, encumbered and desired, not by one lover, as happens now, but by thousands, indeed by everyone else." Nietzsche follows this line of reasoning with the suggestion that:

> Supposing the drive to attachment and care for others (the "sympathetic affection") were twice as it is, life on earth would be *insupportable*. Only consider what follies people commit, hourly and daily, out of attachment and care *for themselves*, and how intolerably awful they look as a result: how would it be if we became *for others* the object of the follies and

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

importunities with which they had previously tormented only themselves?[143]

Finally, and rather poetically, Nietzsche concludes with the speculation that because of the intense interest in the affairs of each other this kind of inexorable expansion of *love* would engender, the poets of this future *utopia* "provided they were left alone long enough to write—would dream of nothing but the happy, loveless past, of divine selfishness, of how it was once possible to be alone, undisturbed, unloved, hated, despised on earth."[144]

Natural saviors?

The first means by which such a dystopian utopia may be avoided would be through the processes of natural selection in which the genetic traits for the contraction of moral concern are passed on through differential reproduction. There is a much more detailed analysis possible as to why the reliance on natural selection to remedy this inexorable expansion of moral concern is an inadequate solution, but the quick response is that, as detailed above by Pinker in particular, the time frame required for a change of this kind at the genetic level is much too long to be of any practical use in response to a problem that is already underway.

This kind of population-level natural solution requires a selection mechanism for/against the propensity for moral contraction/expansion that functions via differentials in reproduction, such that over time there are many more people with the biological substrate for the contraction of caring than for the expansion of caring. The only way for such a mechanism to function as such would be that there is either an acute event in the environment which selects against these too-expansive altruistic tendencies, or the persistence of environmental conditions over a geological timescale that gradually make reproductive success contingent on the reversal of these tendencies. Regardless, the magnitude of suffering from either the acute event or the extended conditions needed to select for more adaptive levels of caring would likely be so great as to justify almost any expense to avoid relying on either of them.

Even with such a selection event or process, the successful dissemination of traits for the reduction of altruism is mathematically unlikely, as proven repeatedly by evolutionary game theory. A primary focus of evolutionary game theory over the last couple of decades has been to establish the stability of cooperative strategies within populations.[145,146,147] Through sophisticated mathematical techniques it has been shown across a wide range of conditions that even small groups of individuals that follow self-sacrificing strategies will eventually take over large populations of mostly self-regarding individuals through differential reproduction.[148] In other words, a gene-based expansion of caring has certain formal and structural advantages which practically ensure the propagation of altruism throughout a population.

This is not to say that there is not a possible natural or organic solution to this crisis of caring, and in particular for the crisis from the collective political manifestations of this arational moral expansion. Given that the effects of this moral expansion are relatively harmless until they manifest as collective action, some of the more dire repercussions may be averted if perhaps a relatively small cultural and political leadership could emerge who, through their ability to transcend the increasingly toxic conventional moralities, are capable of implementing the appropriate, if counterintuitive, policies. As just mentioned, because of the way natural selection works, and given the high mathematical probabilities with which gene-based altruism spreads itself through a population, it is highly unlikely that humanity as a whole will evolve the traits necessary to overcome these challenges from the expansion of moral concern, or even that a significant enough portion of humanity will evolve the capacities needed to respond adequately to this crisis. However, as elaborated extensively by Nietzsche, evolution could still naturally produce a solution.

Evolution of the solution

Nietzsche again anticipates this possibility via his concept of the emergence of the *Übermensch* (or "Overhumans"). He argues that a small proportion of humans will realize a next stage of human evolution via their unique abilities to transcend the conventional valuations of human morality, in the process actually emerging as the saviors of mankind. As Nietzsche writes:

> But some day, in a stronger age than this decaying, self-doubting present, he must yet come to us, the

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> redeeming man of great love and contempt, the creative spirit whose compelling strength will not let him rest in any aloofness or any beyond...This man of the future, who will redeem us not only from the hitherto reigning ideal but also from that which was bound to grow out of it, the great nausea, the will to nothingness, nihilism ...he must come one day.[149]

Nietzsche's depiction of these *Übermensch* is important to clarify at this point. Most people have not read Nietzsche's own writings about the *Übermensch*, but know this concept through secondhand accounts alone and therefore fundamentally misunderstand or misconstrue the characteristics of the *Übermensch* according to Nietzsche. Contrary to the general perception of Nietzsche's *Übermensch*, these people will not be overbearing, egomaniacal psychopaths devoid of concern and love for humanity. Rather, as the culmination of human evolution to this point these rare few will exhibit the highest synthesis of all the distinctly human qualities, as cataloged by the Nietzschean scholar Richard Schact:

> Overflowing vitality and great health; powerful affects and the ability to control and direct them; high spirituality and refinement of sensibility and manners; independence of mind and action; the capacity to befriend and to respect and disdain and deal justly with others as they warrant; intellectual honesty and astuteness; the strength to be undaunted by suffering and disillusionment; persistence in self-overcoming; the resources to undertake and follow through on the most demanding of tasks; and the ability to love and esteem, and above all to create...[150]

Because of their possession of these qualities, this "luxurious surplus of mankind"[151] will, according to Nietzsche, ultimately emerge as the saving grace of humanity.

Nietzsche is not the only one to propose that the salvation of humanity will come from the actions of a relatively few unique individuals whose actions and motivations will seem peculiar, if not incomprehensible, to the majority of people. Consider the perhaps surprising support given to such an idea by Martin Luther King, Jr. in a sermon he gave in 1963. In this sermon King states his profound belief that "human salvation lies in the hands of the creatively maladjusted," and that "the saving of our world from pending doom will come, not through the complacent adjustment of the conforming majority, but through the creative maladjustment of a nonconforming minority."[152]

And this is not the only interesting point of convergence between King and Nietzsche. In his 1964 Nobel lecture,[153] King echoes again both Nietzsche's description of the nihilism of our current age and his depiction of the savior-like qualities of the *Übermensch* given above (although it bears mentioning that in this speech King, like so many others, also misrepresents the thought of Nietzsche in this regard). In this lecture King states his belief that somehow mankind will "rise up to the occasion and give new directions to an age drifting rapidly to its doom [as] here and there an individual or group dares to love, and rises to the majestic heights of moral maturity."[154] This moral maturity will be manifest not as "some sentimental and weak response which is little more than emotional bosh," but rather as the kind of love that "unlocks the door which leads to ultimate reality."[155] This is an almost verbatim recitation of a number of passages by Nietzsche comparing the shallow depth of feeling of the mass of humanity with the depth of feeling of the true *Übermensch*. And, again like Nietzsche, King states his belief that this unique kind of saving love, which as mentioned above is realizable only by this creatively maladjusted nonconforming minority, "has now become an absolute necessity for the survival of man."[156]

Thus, these two exceedingly strange bedfellows both take wildly different routes to arrive at the same conclusion: As the mass of humanity is incapable of recognizing their dire situation and acting so as to save themselves, their salvation can only come through the actions of the unique few who are able to swim against the current of convention and truly love their fellow humans in a way that is incomprehensible to the many.

Although from here on out I refer almost exclusively to Nietzsche's elaboration of the evolution and mission of these *Übermensch* as a possible remedy for the crisis of caring, I intend it as a template for other similar solutions, such as King's, which might be proposed for how such crises could be addressed. Through discussion of Nietzsche's *Übermensch*, the possible merits and eventual shortcomings of these types of solutions, which propose the emergence of a small population of political and cultural leaders as remedies for the current and pending ills of humankind can be

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

articulated, including the inexorable expansion of moral concern and maladaptive policies it produces.

To begin, Nietzsche recognizes that the exceptional ability of this higher type of human to feel, judge, and act beyond conventional conceptions of good and evil will be vilified by the common person—that "the good and the just would call his overman devil."[157,158] However, Nietzsche also questions the wisdom in such matters of the mass of people who are content with comfort and mediocrity as a result of their morality "which is now striving with all its power to attain to that green-meadow happiness on earth." This conventional morality, which emphasizes "security, absence of danger, ease," causes its adherents to regard suffering as "something which must be got rid of absolutely" even though it is only through danger, oppression and severity—"in short, the opposite of all gregarious desiderata"—that the elevation of man can occur.[159]

Likewise, Fukuyama, in the reading of Nietzsche he gives in his book *The End of History*, questions the ultimate benefits for humankind from the realization of such a seemingly idyllic scenario as the cosmopolitan, perpetually peaceful world described by Kant, Appiah, and so many others. Fukuyama asks whether the global proliferation of liberal democracies and capitalism will produce self-directed, risk-taking leaders, or herds of self-satisfied, order-taking couch potatoes, what Nietzsche calls the "last men,"[160] or who elsewhere have been called "men without chests."[161] These "last" humans, as a result of their inherited moral tendencies and as schooled by modern liberalism, will focus on avoiding adversity both for themselves and for others at almost any cost, and in the process give up their "prideful belief in [their] own superior worth in favor of comfortable self-preservation."[162] As notes Fukuyama, "for Nietzsche, democratic man was composed entirely of desire and reason, [and was] clever at finding new ways to satisfy a host of petty wants through the calculation of long-term self-interest," but in the process also completely lost any sense of a striving for superiority.[163] Instead of producing new Caesars or Napoleons, Fukuyama writes, this worldwide cosmopolitan liberal democratic system and its particular "green-meadow" morality will only produce more Jimmy Carters and Ronald Reagans.[164]

A future of such bland sedentariness may actually be better for humankind, rather than the striving for greatness advocated by Nietzsche and Fukuyama; at the very least this great leveling seems to promise much less conflict. Adjudicating which outcome is better depends primarily on what one thinks is the purpose or the glory of humanity, which again will depend in large part on one's moral standards.

The problem, as has been discussed already, is that these conventional moral standards which feel so objective and inescapable are the result of the arational evolutionary processes; thus, the preferences for those circumstances which fit the conventional morality are also arational. Because of the gravity of the problems resulting from the collective political actions of the mediocre mass of humanity who are bound by the strictures of this "herd animal morality,"[165] for Nietzsche the transcendence of this morality by the few is necessary for both the meaningful and the material survival of the human species. As a result, instead of accepting our moral inclinations at face value, much less as infallible, this necessary moral transcendence requires the ability to experiment with morality. Such experimentation is necessary because while "our opinions, valuations, and tables of what is good are certainly some of the most powerful levers in the machinery of our actions, but that in each case, the law of its mechanism is unprovable...we must become the best students and discoverers of everything lawful and necessary in the world: we must become *physicists* in order to be creators in this sense,"[166] or so urges Nietzsche of any prospective *Übermensch*.

However, if there is this genetic and biological basis for these moral tendencies, then for people to become such moral physicists would require commensurate changes in our underlying biological substrate as well to allow such experimentation. As will be discussed next, Nietzsche often seems to infer a biogenetic basis for morality, and likewise recognizes that in the absence of strong selection pressures these genetic variations within the species cannot become fixed throughout the population. As a result, writes Nietzsche, in regards to morality in particular, "the mediocre alone have a chance of continuing their type and propagating... 'Become mediocre!' is now the only morality that still makes sense"[167] Therefore, as this necessary moral revaluation requires instincts and behaviors other than those which give rise to the conventional human moralities in the first place, Nietzsche also acknowledges that this new kind of

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human must have "other conditions for its origin and for its maintenance than the average man."[168]

As population-level evolutionary processes have been ruled out, the only other natural genetic processes that might account for the ability to transcend this inherited morality must be found at the level of the individual. An important point is that in emphasizing the uniqueness of the origin of these differently evolved humans it is not that Nietzsche simply excludes most people from becoming *Übermenschen* by fiat. Rather he concludes that the majority of people simply will not have the necessary internal (i.e., biogenetic) constitution to move beyond conventional moralities. However, according to general evolutionary principles and Nietzsche's own understanding of evolution, even genetic processes at the individual level are unlikely to produce the required effects on the scale necessary to save society from itself.

Following John Richardson's analysis of Nietzsche's thinking on evolution, the only other ways for the Nietzschean evolution of these higher humans to occur in a biological sense is either as random variations in the inherited genome or as the result of heritable adaptations of human nature which occur within the lifetime of individuals.[169]

In the case of genetic mutations through natural selection, as Nietzsche himself so often points out, any variations of this kind at the level of the genome which result in exceptional individuals will be washed out in subsequent reproductions by the vast pull of mediocrity prevalent in the rest of the population.[170] Per Gregory Moore, to the degree that Nietzsche conceives of the evolution of these higher humans in terms of these "individual leaps beyond the ambit of the type," what persists and is heritable is the *type* and not the *token* of the species, such that the species cannot be raised or "progressed" by the innovations of the few rare individuals. Rather, the overriding pull of evolution is towards a "morphological stability in the herd"[171] around the type of the species.

In the case of inheritance of acquired traits, Nietzsche does make observations such as "one cannot erase from the soul of a human being what his ancestors liked most to do and did most constantly," or that "it is simply not possible that a human being should not have the qualities and preferences of his parents and ancestors in his body, whatever appearances may suggest to the contrary."[172] If these adaptations are still assumed to be gene-based and spread through the population via reproduction, these processes of transmission can only occur as adaptations in the life of an individual which are then genetically passed on to subsequent generations—or that these adaptations are Lamarckian in nature, an explanation which has been greatly discredited as a scientific explanation—at least until the recent emergence of compelling findings from epigenetics.[173,174]

A recurring critique of the evolutionary thinking of Nietzsche is that he subscribes to a rather strong biological pre-determinism which reduces ultimately to Lamarckism,[175,176,177] although Schact in particular cautions against attributing an exclusively biological emphasis to Nietzsche's conception of the emergence of the *Übermensch*.[178] In regards to the biological inheritance of acquired characteristics, as notes Richardson, "all the richer ways Nietzsche thinks organisms are structured 'for self-overcoming' collapse when we remove his Lamarckian support. Without it, organisms can't be designed to overcome themselves, as a way to improve the species"[179] To the extent Lamarckian inheritance is invalid, the claim for an enduring biological basis for adaptations of this kind collapses. The only other biogenetic alternative is the "extremely attenuated" mechanism of individual genetic mutation which for the reasons discussed before is unlikely to be the source of this moral overcoming.[180]

The inevitable outcome in either case, as Nietzsche repeatedly concludes, is that any singular genetic event capable of producing disturbances to "the social mishmash" is liable to be erased within two or three generations "until everything has become *mob*." The result of this lack of permanence of uniqueness is that "in such circumstances power is relegated to the *mediocre* [with] mediocrity as the trustee and bearer of the future," with the implication that "the *enhancement* of the type may prove fatal to the *maintenance* of the species."[181]

In other words, even according to Nietzsche's own understanding of biological evolution it does not appear that the genetic innovations needed to counteract the mindless, biologically based expansion of empathy can arise through either random genetic drift or quasi-Lamarckian inheritance to spread through the population. One caveat, as mentioned before, is that there is suggestive evidence from the newly re-emerging

field of epigenetics that genetic expression may be more responsive to environmental conditions on a much shorter timescale than that suggested by the modern or neo-Darwinian evolutionary synthesis codified around seventy years ago.[182] For example, specific epigenetic changes have been correlated with changes in a number of morally-relevant behaviors observed across multiple generations in both animal and human studies,[183,184] but epigenetics is still such a newly emerging field that the implications of these possibilities are difficult to address at this point. Thus, if the catastrophe of too much biologically-induced caring is to be avoided, the only viable remedy available to us at this point is biotechnology.

Made to order Übermensch?

If natural processes are unlikely to produce a viable solution, is humanity doomed to love itself into unnecessary hardships and a possible catastrophe of caring? One particularly intriguing possibility that has not yet been addressed is the biotechnological response and, more specifically, the possibilities for enduring behavioral modification through genetic engineering similar to what is recommended by the GVP.

Interestingly enough, we encounter Fukuyama again here through his analysis of the consequences of advances in biotechnology in his book *Our Posthuman Future*,[185] by which is meant the transformation of what is currently perceived as the human "essence" into something different than what it has always naturally been.

Fukuyama begins with a critical revision of his original thesis from *The End of History* by noting that "there can be no end of history without an end of modern natural science and technology."[186] As long as human behavior emanates from our naturally evolving biological substrates, as has been the case for millennia, then Fukuyama's original position, as well as the expanding circle of Singer and Pinker, not to mention the cosmopolitanism of Kant and Appiah, all remain valid (and empirically substantiated) predictions; however, to the degree that humans are able to manipulate our own fundamental biologies, then so are we also able to change the parameters of the space of human evolutionary possibilities. This change in possibilities thus renders these currently valid explanations obsolete as predictions of future outcomes, thereby requiring new theories, explanations, and predictions.

The idea of genetically modifying human morality, even for the purposes of enhancing this morality, is a daunting and frightening prospect, as evidenced by the adverse reactions to the Genetic Virtue Project proposed by Walker. However, as Fukuyama discusses, such extreme measures may be unnecessary to counteract the riptide of natural human morality given the possibilities from neuropharmacology, and neuropsychopharmacology.[187] Over the last century the neurochemical bases of many different possible states of the human mind have been identified, and a dizzying array of drugs have been developed which target specific neurotransmitters in the brain to treat all sorts of morally relevant mental conditions and disorders.

In this way, neuropharmacological treatments pose many of the same possibilities and ethical quandaries as genetic engineering in regards to modifications of behavior and issues of social control. In fact, neuropharmacology perhaps presents an even more immediate concern as its effects are already apparent and rippling throughout society to a degree that genetic engineering is not. However, this neuropharmacological modification of morally relevant behavior merely temporarily alters individual-level brain chemistry without addressing the actual root causes of this dangerous expansion of moral concern. Therefore, gene-level engineering is still the most likely means to reverse this long-term trend of moral expansion.

Again, the argument I make here is that as this currently dangerous mismatch between our cultural evolution and the evolution of our biologically based expanding morality is ultimately a gene-level phenomena, the only truly effective and ultimately enduring response must likewise be at a genetic level. Given that evolution and natural selection are unable to produce the necessary gene-level changes for all the reasons previously mentioned, the most promising route for enduring genetic modification seems to be via germline engineering.

In contrast to the more common and current practice of somatic gene therapy, which targets the cells of the "soma" (or body) and thus does not extend beyond the individual patient undergoing treatment, germline manipulations are made to the genes of the "germinal" (or reproductive) cells so that they are passed on to subsequent generations.[188] At present neither the knowledge of the specific genetic networks underlying this moral expansion or the technology to

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

alter the germline in intended ways currently exists to implement such a program in full. But at least the basic technology and general understanding for how to so manipulate genes are already in place. The technology has already reached a level of sophistication that safeguards for such processes, including the introduction of new genes on an artificial chromosome so that the original genome remains intact, have been used in the germline engineering of animals for at least a decade[189]—and are becoming viable for application to humans.[190,191]

It is thus not implausible to assume that the technologies to manipulate moral behavior through the genes might become available within the foreseeable future. In fact, as biologists John Campbell and Gregory Stock noted more than a decade ago, "what scientists and the public need to realize is how close human germline engineering may be."[192] According to Campbell and Stock, difficult technical obstacles which would have been a "Herculean task" twenty years ago are now within the grasp of a good Ph.D. student today, so that human germline engineering could actually become feasible in the next couple of decades, if not sooner.[193] As Walker notes in his exposition of the GVP, due to the nature of the issues involved the manipulation of genes for the purposes of modifying moral behavior "may prove to be the most profound [issue] of the century, if not the most profound that humanity has ever confronted," and merit serious consideration even at this early stage of development.[194]

The desirability and ethicality of engaging in such intentional interventions into our common pool of human genetic inheritance are already being debated.[195,196] Opponents of such interventions usually base their opposition on the possibility of unforeseeable and irreversible damage to this genetic heritage, which is considered "a joint possession belonging to all members of the human species,"[197] as well as on the implications these interventions would have for the concept of human rights.

For example, Annas and colleagues point out that because germ-line genetic engineering would conceivably alter basic human nature, it would in the process also undermine the entire system upon which human rights are constructed.[198] Thus, argue others, tampering with this collective heritage "is a question of respect for human dignity from which all human rights derive,"[199] and that "if there are any human rights at all, then there is a human right not to have the necessary conditions for the having of such rights altered."[200] Ultimately, as this "genetic patrimony of mankind [is] irreplaceable and of enduring worth," it must also therefore be subject to "specific forms of social protection."[201] To safeguard this biological and genetic basis of human rights upon which depends so much of modern ethics and jurisprudence, the Council of Europe in its *Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine* and UNESCO in its *Universal Declaration on the Human Genome and Human Rights* both seek to limit their member governments to sanctioning modification of the human genome exclusively for "preventive, diagnostic or therapeutic purposes and only if its aim is not to introduce any modification in the genome of any descendants,"[202] which obviously would also not allow the genetic modifications necessary to counteract the expansion of moral concern that is the focus of this paper.

However, there very reasonable and practical justifications for the other side as well. James D. Watson, one of the fathers of modern genetics, questions the supposed "sanctity of the human germline" and unreservedly advocates the pursuit of such interventions for the benefits they can bring. In a panel discussion of the feasibility and significance of germline engineering, Watson refers to this notion of the sanctity of the human germline as "complete nonsense." "Evolution," Watson notes, "can be damn cruel, and to say that we've got a perfect genome and there's some sanctity. . .is utter silliness." Watson even echoes one of the main arguments of this paper about the maladaptive extension of moral concern, observing that "terms like *sanctity* remind me of animals' rights. Who gave a dog a right? It goes on forever. And then there's the right of a salamander and a frog's rights. It's carried to the absurd."[203]

One of the other panelists in this discussion likewise observes that humans have always been "the main instruments in their evolution" via choices in regards to sexual partners, and that therefore "if we start to tamper with our evolution, we are not doing something that is unique or unnatural or something that hasn't happened before [just that] now we can bring our rationality to it."[204] Just as with the practice of

medicine generally, which also carries the possibility for inadvertent harm in the search for benefits, proponents of this position argue that if we can intervene genetically in the human condition for the eventual benefit of humanity through the alleviation of unnecessary suffering, we should. Finally, another panelist in this discussion likewise observes how momentous it is that "for the first time we understand that as a species we have the ability to self-evolve," and concludes the discussion remarking on the thought of just how incredible this is, that for the first time in the history of the evolution of life a species—*our* species—has this ability to intentionally direct its own evolution.[205]

Given the magnitude of the consequences of this inexorable expansion of moral concern and the implications for our contemporary ethics and our politics, how to address the possibility of a crisis of caring merits serious discussion. Because of the deep genetic basis of this expansion of caring and the unlikelihood of this problem being solved by natural means discussed before, the most effective use of this potential to intentionally direct our evolution is to either slow down or even reverse this expansion of caring via genetic engineering. Though likely to be a wildly unpopular and even despised proposal, this does not mean it is wrong; besides, according to the analysis in this paper, without some kind of intervention this expansion of caring will only continue, and continue to our detriment.

Politics and the moral riptide of human evolution

As Fukuyama notes in *Our Posthuman Future*, "it may be the case that, as Nietzsche predicted, we are fated to move beyond this moral sense. But if so, we need to accept the consequences of the abandonment of natural standards for right and wrong forthrightly and recognize, as Nietzsche did, that this may lead us into territory that many of us don't want to visit."[206] For better or for worse, though, my analysis suggests that this abandonment of natural standards is unlikely to occur for any but a small minority of humans. As a result, and contrary to both Fukuyama and Fukuyama's Nietzsche, I believe the evidence indicates that the real danger is not of a *post*human but of an *ultra*human future in which we do not make ourselves something other than human but rather that we inexorably become even more excruciatingly human, and to our collective detriment.

To the degree that my preceding analysis is correct, responding to this impending crisis of caring requires working within liberal democratic political systems. In particular, effective responses to this crisis would require convincing enough citizens and voters—composed primarily of Nietzsche's mediocre "men without chests"[207]—that their deepest feelings and most sincerely held values are "wrong" in the sense of being maladaptive on a collective level, and then convincing them to approve remedies which despite their appropriateness will still feel fundamentally immoral.

This necessity for securing mass consent as a result of the increasing democratization of the world, which is itself a symptom of an arational expansion of caring, transforms this from a "wicked" problem to a "super wicked" problem. Wicked problems have been classified as those policy problems with no obvious tests for possible solutions, no opportunities for trial-and-error, and little latitude for policy planners to be wrong.[208] According to Levin and colleagues, who coined the term *super wicked*, these are problems which, in addition to the *wicked* characteristics, also include a swiftly approaching culmination, no clear central authority with responsibility for resolving the problem, "hyperbolic discounting" of the impending costs, and—with particular relevance to the crisis of caring identified in this paper—that "those seeking to end the problem are also causing it."[209] The prototypical example of a super wicked problem is formulating an adequate collective response to global climate change. I contend the inexorable expansion of moral concern is just such a super wicked problem as well, but actually even more insidious and wicked than climate change.

Most policy problems are wicked problems (otherwise, they would likely be resolvable without resort to political intervention), but very few rise to the level of super wicked problems. As detailed by Levin et al., super wicked problems defy conventional policy analyses and approaches and therefore require "a new epistemological orientation" on the part of policymakers.[210] In particular, it is not a lack of awareness of these super wicked problems—though in regards to the arational expansion of caring a lack of awareness is still a significant issue—rather, the

https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press

primary difficulty is "the tendency of our political institutions, as reinforced by our individual tendencies as consumers and voters, to make decisions that give greater weight to immediate interests and to delay required behavioral changes, even when doing so is clearly contrary to our long-term interests."[211] Again, this is also an apt description of the circumstances of this inexorable expansion of caring.

Given the nature of these unique challenges, Levin et al. find that "policy interventions that can constrain our future collective selves"[212] are the most effective means of addressing super wicked problems. Levin et al. go into much more detail why this is the best approach for super wicked problems, but this constraining of our future selves via a novel epistemological orientation is in essence what I also propose as the most effective means for addressing this super wicked problem of the impending crisis of caring.

Ideally, our best scientific efforts would be marshaled in the generation of solutions to ameliorate the inexorable expansion of moral concern. However, as with the super wicked problem of climate change, most of the debate around this crisis of the expansion of caring will likely not be scientific discussions about the appropriate political response as much as they will be political debates about the science. Even more insidious in this case, though, is that most scientists—as humans also caught up in this moral riptide of evolution—may likewise be incapable of recognizing that such a problem even exists. The only scientific consensus liable to be reached in this circumstance would be the consensus of the seemingly objective feelings produced by this expansion of caring, which instead of promoting recognition of the actual problem could instead lead scientists to condemn even the suggestion of such a thing as too much caring, much less that too much caring could be a crisis.

Whether or not this expansion of caring is actually occurring for the reasons I suggest, or is liable to result in the problems that I have discussed, or is remediable through the mechanisms I propose, are all open questions for discussion. In this paper I have described the expansion of moral concern as a super wicked problem, and provided evidence in support of this conclusion. On the one hand, it may be that my evidence is faulty, or that I am mistaken in the conclusions I draw from this evidence; if this is the case, I have tried to present this proposal in as transparent and falsifiable a manner as possible. On the other hand, even while this proposal may feel objectionable to many on a visceral or emotional level, it may also be that I am at least to some extent correct that there is an inexorable and arational expansion of moral sentiments.

To the extent I am correct, this arational and ultimately unbounded expansion of caring presents a significant threat to the well-being and stability of contemporary societies primarily through the self-indulgent and maladaptive policies it engenders. Finding the right policies to address this super wicked problem will be difficult enough; the even greater challenge, though, is in even becoming aware that a problem exists—that not only is this super wicked threat unseen but that as a betrayal by our best intentions it is practically unforeseeable.

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https://doi.org/10.2990/33_1_2 Published online by Cambridge University Press