The Normative Significance of Future Moral Revolutions

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Abstract:

Since moral revolutions have occurred in the past, it seems plausible to suppose that they will occur again in the future. What significance, if any, does this prospect have for our present normative outlook? This paper identifies eight ways in which this question may be answered, drawing on recent arguments in the philosophical literature. Our aim is not to vindicate any of these purported normative responses as correct. Instead, our aim is taxonomic and synoptic: we provide an overview of the different responses that the prospect of future moral revolutions gives rise to and analyze how these responses are modulated by judgements of certainty and uncertainty, whether they are practically or epistemically oriented, and to what extent they depend on ethical and metaethical assumptions.

1. Introduction

In societies worldwide, the appreciation of moral norms and values has changed over time (Appiah 2010, Baker 2018, Buchanan and Powell 2018; Danaher 2021a, Kitcher 2021, Pleasants 2019, van de Poel 2021). For example, once upon a time, societies widely endorsed torture, slavery and the subjugation of women. These practices were thought to be morally permissible, perhaps even commendable. Nowadays, they are widely rejected. Some scholars refer to these historical episodes of considerable moral change as 'revolutions', a name befitting their dramatic and often paradigm-shifting character (Baker 2019; Pleasants 2018; Appiah 2010).

Since moral revolutions have occurred in the past, it seems plausible to suppose that they will occur again in the future (Williams 2015, Danaher 2021a). This is not to say that their unfolding is inevitable, but rather that, if history is to provide us with any guidance, the possibility that future moral revolutions will occur should be taken seriously. But what is the normative significance of this possibility? Does it have any implications for us right now, or could it have some implications once we enter into a period of moral disruption? This paper attempts to answer these questions. It does so by identifying, describing and evaluating eight potential normative responses to future moral revolutions. It focuses on the role that judgments of certainty and uncertainty play in shaping those normative responses, and the potential for metaethical commitments to modulate their impact.

The paper is structured as follows. In section 2, we discuss the concept of a moral revolution and explain why it is worth considering the normative implications of future moral revolutions. In section 3, we discuss the role of uncertainty and certainty in this inquiry. In section 4, we describe, in detail, eight potential normative implications of future moral revolutions. In section 5, we consider whether these normative implications are compatible with different metaethical commitments. Section 6 then concludes by highlighting some avenues for future research. The paper does not purport to defend any particular view of what the correct normative response to future moral revolutions is. Its aims are taxonomic and synoptic: to give a detailed overview of the various possible responses, and the factors that modulate them.

2. What is a Moral Revolution and Why should we care?

A 'moral revolution' can be defined as a significant change in a society's moral beliefs and practices. Such revolutions do not, necessarily, entail changes in the underlying moral truth; whether they do is a metaethical issue, one to which we return to in the penultimate section of this paper. Regardless, what matters presently is that moral revolutions involve significant changes in what individuals and societies take the moral truth to be.[1]

Recent scholarship on the concept of a 'moral revolution' has largely been inspired by Thomas Kuhn's work on scientific revolutions. As a result it has tended to earmark shifts in existing, society-wide moral paradigms as the hallmark of a moral revolution. For instance, Robert Baker has argued that revolutionary moral change consists of any shift in "framework[s] of communal standards for character and conduct that a community's members internalize" (Baker 2019: 17). Examples of such paradigm-shifting change, according to Baker, include changes in attitudes toward the sanctity of dead bodies, the permissibility of abortion, and the ethical treatment of medical subjects. Similarly, Nigel Pleasants (2018: 587) has argued that revolutionary moral change concerns "changes in perception of fundamental moral status by the moral society as a whole." Examples of such revolutionary change, according to Pleasants, include changing attitudes toward the moral status of slaves and women.

This Kuhnian approach is appealing but leads to further questions. How do we identify a moral paradigm? When do changes become sufficiently paradigm-shifting? Do the underlying mechanisms of change matter to whether something counts as a revolution or not? In attempting to answer these questions, Robert Baker has argued for a terminological framework that captures the distinction between more or less significant moral changes, as well as the different

[1] Moral revolutions might also involve expansions or contractions of what society regards as the moral domain. For instance, some domains of life might be moralised whereas previously they were not (moralisation); conversely, some domains of life might no longer be regarded as raising moral issues, whereas previously they were (demoralisation). At an extreme we might even imagine a society changing to the point where it no longer recognised any moral norms or values (nihilism). We do not explore that extreme possibility in any depth in this paper. We would like to thank an anonymous reviewer for encouraging us to acknowledge this point.

mechanisms of change. On the first point, he distinguishes between *moral revolutions* and *moral reforms*, arguing that the latter do not entail change in an underlying moral paradigm. On the second point, he distinguishes between *intentional* and *non-intentional* forms of moral change. He uses the term *moral drift* to capture non-intentional forms of change and reserves the terms moral *revolution* and *reform* for changes that come about as the result of intentional human action (campaigns, reform groups, arguments, *etc*).

Baker's conceptual framework has been criticised. Some people have pointed out that it's not always easy to identify what is essential to a moral paradigm as opposed to what is peripheral or trivial (Danaher 2020). Others have argued that the fixation on intentional change, as opposed to non-intentional change, seems irrelevant to determining whether something counts as a revolution or not (Nickel, Kudina and van de Poel 2022). The latter criticism seems apt. Attitudes toward sexual morality, in particular attitudes toward extra-marital sex, appear to have undergone revolutionary change in the course of the 20th century (Greenwood and Guner 2010; Swierstra 2013). The common argument is that technological change, particularly the availability of reliable and effective birth control, was a crucial causal factor in this change, and not only the work of any specific intentional reform movement. But the central role of technology in this moral revolution does not seem like a good reason to dismiss this as an example of revolutionary change (Hopster et al. 2022).

If we accept that the underlying mechanism of change is not relevant to whether something is classified as a moral revolution, we may still accept that there are other factors that are relevant to that classification (cf. Hopster 2021a on the criteria relevant to identifying 'social disruptiveness'). The *scope* of moral change may be one such factor. The more moral beliefs and practices that are changed, the more revolutionary the change will seem to be. For instance, a change in sexual norms, familial norms, and workplace norms, combined, would seem to be more revolutionary than a change to any one of those norms by itself. The *depth* or *centrality* of the altered norms would also be a relevant factor. For instance, if you live in a liberal-democratic state, any change to your society's attitude to liberalism and democracy will seem more revolutionary than, say, a change in its attitude toward friendship norms. Finally, the *relative*

pace of moral change may be a relevant factor. The quicker the change, the more revolutionary it will seem to be because of the 'adjustment shock' that comes with it.

Needless to say, none of these factors is entirely constitutive of a moral revolution. The distinction between revolutionary change and non-revolutionary change will probably always be fuzzy. Nevertheless, using these three factors might help us to distinguish between more or less clearcut cases of moral revolution. In any event, the remainder of this paper does not depend on any particular account of a moral revolution, other than that revolutions entail a substantial change in a given society or social group's morality. Our focus is on the normative significance of future moral revolutions. We presume that we can identify such significant changes, even if the boundary lines are fuzzy.

Why would anyone want to know about the normative implications of moral revolutions? There are two main reasons.

First, there is the practical reason. If a moral revolution were to show that our current moral beliefs and practices are wrong (or if we are likely to perceive them as being wrong after the revolution), that could have practical and normative significance right now. Indeed, the possibility of future moral change is often invoked in rhetorical appeals to substantiate moral claims in the here and now. Consider the question "how will we go down in history / how will our grandchildren judge us?", which is often heard in climate and animal welfare debates. The question is asked with the presumption that future generations will have a different perspective on our current mainstream practices than most of us currently do (or a different understanding of their implications) and we should factor this into our moral practices today. Its rhetorical appeal relies on the normative assumption that we can be confident about what our grandchildren will vindicate as the correct moral view. But is such a normative assumption plausible, and if so, under what conditions? Furthermore, a moral concern for the future, and the possibility of future moral progress or change, is implicit in many moral theories, particularly those drawn from a utilitarian framework. In this sense, a futurist orientation is, arguably, a core part of having a

moral outlook, as least as morality is now widely understood.[2] But if this is correct how should we morally respond, now, to possible future moral changes?

Second, there is the scholarly reason. There is emerging scholarly inquiry into moral change. Some authors approach the topic from a conceptual angle: what is the nature of moral revolutions and moral change? What different forms can change take (e.g van de Poel 2021)? Others take a historical approach, trying to understand how values have changed in the past (Baker 2019; Morris 2015; Appiah 2010). Still others take a futuristic approach, arguing that we should work to anticipate or predict future moral changes (Danaher 2021a; Hopster 2022). Normative work on the significance of moral change has, however, been largely absent, thus far, from the scholarly literature (with, perhaps, the exception of Williams 2015). This is not to say that no one has identified appropriate responses to future change, or said anything important about them. People have done this, and we will review what they have said below, but they have usually done so in an offhanded way (typically as an aside or an unstated implication of another view). To date, there has been no systematic attempt to identify the possible normative responses to future moral revolutions and considered their merit. Furthermore, the bodies of scholarship that investigate moral revolutions on the one hand (see Klenk et al. 2022 for an overview), and (meta)ethical work on moral progress on the other (see Sauer et al. 2021 for an overview), have thus far remained largely detached. So there is a scholarly lacuna to fill.

3. Moral Uncertainty and Certainty

Judgments of certainty and uncertainty play an important role in how we think about the appropriate normative response to future moral revolutions. Consider again the question "how will we be judged by our grandchildren?" The presupposition of whomever it is that asks this question is typically that we know, roughly, how future people will judge our current moral practices. To paraphrase William Gibson, for such people, the moral future is already here; it's

[2] The ethical position known as 'longtermism' – roughly: positively influencing the long-term future of humanity is a key moral priority for our present era – is perhaps the most obvious example of this. See MacAskill 2022 for more.

just unequally distributed.[3] They, and like-minded dissidents, have attained the relevant moral enlightenment. They just need to spread the good word. If their prediction about how the future will judge the present is accurate, then the normative response to future moral change might seem rather straightforward: current society should align its morals with the morals that future society will vindicate as correct (and that are currently already endorsed by these dissidents).

But not everyone is going to be so certain about the moral future. They might point to past examples of moral change that seem disruptive and relatively unpredictable from a historical point of view. Was it really so easy, for example, for our grandparents to predict that gay marriage would become morally and legally permissible within their lifetimes? What about our great-great-great grandparents living in the early 1800s? Would it seem to them as if the arc of moral history was pointing in that direction? If we take an open-minded view of the possible moral future, and if we project ourselves sufficiently far forward, many of our moral judgments might be open to reinterpretation, reprioritisation or outright dismissal. The more uncertainty there is about the moral future, the more challenging it seems to assert its practical lessons in the present.

To reinforce this point, it is worth bearing in mind different questions we can ask about the nature of our moral certainty/uncertainty about the moral future (cf. Kwakkel et al. 2010), such as the following:

> (a) What is the source of our uncertainty? What is it that might change about our moral values and duties that makes prediction hard? Or does uncertainty about the moral future not (only) stem from the prospect of future change, but is it, rather, a function of present-day moral uncertainty?
>
> (b) What are the epistemic implications of our uncertainty about the moral future? Can we attach any likelihood to different scenarios? Is there deep uncertainty about which new moral paradigm will come into place after a moral revolution, or is it possible to have some foresight of where things might end up?

[3] For details on this quote, see https://quoteinvestigator.com/2012/01/24/future-has-arrived/

Consider, as an example, the following moral judgment:

> **Permissible sex:** It is only permissible to have sex with a person with their ongoing consent.

Is it possible for this moral judgment to change over time? Right now, in the vast majority of societies, it might seem like an impossibility. This judgment is deeply entrenched in a progressive liberal moral paradigm. But if history is any guide, then judgments of this sort can change. After all, this particular moral judgment has only recently emerged as the result of considerable moral change over the past century or so. For instance, until relatively recently a 'marital exemption' to non-consensual sex was widely accepted by legal systems in Anglo-American jurisdictions. Similarly, consent was not always considered the relevant factor in determining whether sexual conduct was impermissible. The presence of force was considered to be the most important factor. Furthermore, as we write this, there is now considerable debate over what exactly it means to 'consent' to sex (Dougherty 2015). Traditionally, moral and legal systems adopted what might be termed the 'no means no' model of consent: unless someone explicitly signalled an unwillingness to have sex, they were presumed to be consenting. More recently, there has been a shift towards a 'yes means yes' or 'affirmative' standard of consent: unless someone explicitly signals a willingness to have sex, they are presumed not to be consenting.

How might the judgment change in the future? What are the potential sources of uncertainty regarding its future status? One obvious source of change would be in the concepts that make up the judgment. There may, for example, be further evolution in the concept of consent. Perhaps consent, by itself, will no longer be enough to make sex permissible. There is already a body of feminist scholarship arguing that consensual sex can be morally problematic (Cahill 2016; West 2020). Dismantling the patriarchal context in which sex takes place is thought to be required and this might cause us to reconsider the liberal-autonomy based paradigm on which the judgment is based. So we may end up adopting a 'consent+' model of permissible sex: you need consent plus something more. Relatedly, the use of technology to facilitate sexual self-expression may change

what it means to 'have sex'. Many legal systems, when defining concepts such as rape and sexual assault, assume a biological model of sex: sex is the penetration of a biological orifice by a biological appendage. The Oxford Dictionary, too, defines rape as "the crime, typically committed by a man, of forcing another person to have sexual intercourse with the offender against their will." But the use of virtual reality platforms and haptic technology may cause us to reconsider this biological approach to sex. Indeed, there are already people arguing that this should be the case (cf. Danaher 2017; 2021b; Sparrow and Karas 2020). Other technological developments might cause us to reconsider who or what counts as a 'person', expanding the judgment to cover artificial and non-human persons.

Although each of these changes is uncertain, to some extent, many are plausible extrapolations of current technological and sociological trends. We might attach some epistemic likelihood to them occurring. For example, if we were to bet, we might say that it is 70% likely that our definition of sex is going to change in light of technological developments, and this will affect our judgments as to what counts as rape or sexual assault. Other changes may be less predictable and based on more far-fetched possibilities. Perhaps, for example, there will be a radical desexualisation of the human species due to pharmacological and technological alterations of human embodiment (e.g. we become cyborgs with little-to-no libido). This might make the preceding judgment irrelevant to our new, cyborg-centred moral paradigm. The sexual domain may become largely demoralised, not subject to moral judgment or censure. Our cyborg offspring may simply not care too much about something that right now seems central to our ethical worldview. This seems possible — in some weak sense of the word 'possible'[4] — but how likely is it? It's hard to put a number on it.

The point, here, is not to make particular claims about the future of our sexual morality. The point is simply to highlight the different forms of uncertainty that can arise. Our moral judgments are made up of particular concepts and are often[5] undergirded by deeper normative principles or

[4] We might say that it is physically possible, but whether it is technically possible remains to be seen. Lack of positive evidence that this is an impending change serves to diminish or discredit its status as a 'realistic possibility' (Hopster 2021b).

[5] Though not necessarily. In particularistic moral worldviews each individual moral judgment may not derive any support from a deeper principle or paradigm.

paradigms and assumptions about the human condition. There can be uncertainty about the specific concepts that make up our moral judgments and uncertainty about the principles or paradigms underlying them. Both can be altered by technological and sociological (economic, cultural, institutional) forces. Some of those alterations are plausible extrapolations from our current reality; some are more outlandish and difficult to foresee. We reflect on this point several times in what follows.

4. Eight Normative Responses to Future Moral Revolutions

So what are the appropriate normative responses to future moral revolutions? To answer this question, it helps to have a clearer sense of what is meant by the term 'normative response'. The term is deliberately vague because it was chosen to cover a number of possible impacts of future changes. Some normative responses have to do with the content of the norms we currently follow: how we ought to behave and what we ought to do *in the present* (i.e. in advance of those revolutions). Some of the responses have to do with our normative attitudes and judgments: what we should believe about our current moral frameworks, given the possibility of change. Some of the responses have to do with how we evaluate our present beliefs and practices: how we should judge the behaviour of ourselves and others in light of the possibility of future moral change, and whether we should be all that confident about present morality to begin with.

In what follows, we identify eight possible normative responses to future moral revolutions. Many of these have been identified in the recent philosophical literature, albeit oftentimes only implicitly linked to the possibility of future change. We are not arguing that any one of these responses is more plausible or more warranted than the others. Our aim is to (a) clearly articulate these responses and (b) identify the factors that would make them more or less plausible. Consequently, we try to be neutral with respect to the different normative responses, to the extent that this is possible.

Let's turn to the eight responses now.

Response 1 - ***Progressivism/accelerationism is warranted - we, in the present, should speed up future moral revolutions because they are likely to be for the better***.

In other words, future generations are going to be closer to the morally correct point of view and we should do our best to get to where they will be, as soon as possible. In this instance, the normative response is directly action-guiding: it is supposed to tell us something about what we should be doing right now.

We see many interesting examples of this response in recent moral and political debates. Consider, for instance, some of the debates about the right to gay marriage. When activism around this issue led to legal challenges in the US, it was noted by some legal officials that the law had, historically, been on the 'wrong side' of important social moral changes (e.g. defending legal bans on interracial marriage or enforcing school segregation). These legal officials argued that it was important for them to be on the 'right side' this time around. This was one of the reasons why the Attorney General of Virginia refused to defend that state's law prohibiting same-sex marriage (McLain 2018). Implicit in his view was the belief that the current social-moral (or in this case legal) consensus was wrong and that it needed to be changed. Future generations would not judge him kindly if he impeded that change.

Consider also the debate around factory farming and veganism. Some advocates for the end of factory farming, and in favour of vegan lifestyles, couch their arguments in terms of what the future moral consensus is likely to be. An explicit example of this is the argument put forward by Anthis and Paez (2021**)** in favour of 'moral circle expansion'. Their argument is based, in part, on a normative principle that they believe is correct or plausible, namely, that the lives of all sentient beings matter, morally speaking. It is also based on the assumption that expanding humanity's moral circle to include all sentient beings would facilitate greater moral progress because history shows us that our moral circles were too narrow in the past. Since we now view past narrowness as a mistake, expanding the circle will enable us to avoid future moral atrocities before they occur. As they put it themselves:

"…even if one is unsure what exactly the future moral circle should look like…pushing on the current frontiers of the moral circle (e.g. farmed animals) or otherwise engendering expansion towards other kinds of sentient beings is a compelling moral priority not only for utilitarians and others concerned with doing the most good but, more generally, for those concerned with preventing serious wrongs."

(Anthis and Paez 2021, p. 2 online version).

The plausibility of progressivism hinges, to a large extent, on how confident we are in our judgment that the future moral consensus is likely to be better than the present one. Appealing to a widely accepted existing principle (e.g. sentience is a morally significant property) and the historical record (past expansions of the moral circle have been welcome) is one way to increase our confidence in such assessments. Either way, it seems like a reasonable degree of certainty about the desired direction of moral travel is required to support progressivism.

This should be contrasted with the second possible response:

Response 2 - ***Conservatism is warranted - we, in the present, should slow down or stop a future moral revolution because it is likely to be a change for the worse***.

In other words, future generations are likely to get morality wrong and we should do something to stop them from making such a mistake. This is the inverse of the first response and is also directly action-guiding.

There are many examples of people advocating this precautionary/conservative approach. Indeed, in some sense, most conservative political-moral theories presume that changes in social values are for the worse and try to prevent them from occurring.[6] There are, however, some interesting examples of this response being endorsed within debates about technology and social change, too. Consider, for instance, the debate about the 'rights' of artificial beings (AIs and

[6] We say 'most' because there is disagreement about what exactly unites 'conservative' political-moral theories. See, for instance, Honderich 2005 on the different meanings of 'conservative'.

robots). There are some scholars who argue that we should take the potential rights of such beings seriously and embrace the disruption to existing social moral values that this entails (Coeckelbergh 2010**,** Gunkel 2018, Gellers 2020). Others are more sceptical (Birhane and van Dijk 2020, Bryson 2018). Some of these sceptics base their arguments around the claim that it is impossible, or at least very difficult, to create artificial beings that deserve to have rights and that the debate is a distraction from more important issues. Some, however, argue that even if it were possible to create such beings, we should not do so because the moral revolution this would entail would be unwelcome.

Joanna Bryson's scepticism is an interesting illustration of this attitude. Bryson openly acknowledges that our existing moral consensus is open to renegotiation and change. Furthermore, she accepts that we could redesign our social-moral framework so that artificial beings are accepted as deserving rights. She just argues that it would be a bad idea to do so:

> *"It is unquestionably within our society's capacity to define robots and other AI as moral agents and patients. In fact, many authors (both philosophers and technologists) are currently working on this project. It may be technically possible to create AI systems that would meet contemporary requirements for moral agency or patiency. But even if it were possible, neither of these two statements makes it either necessary or desirable that we should do so."*
>
> (Bryson 2018, p. 24)

Why would it be bad? Because of the disruption it would entail to our existing moral system. Bryson makes her case by asking us to imagine two hypothetical societies, one in which only humans and human organisations have moral and legal status, and another in which robots and AI are given some moral status. We can view these as two hypothetical societies as representatives of possible moral futures, the second one requiring a revolution from our existing position. She argues that there would be too many risks inherent in the revolution required by the second moral system. It would undermine traditional human-centred moral frameworks of well-being and responsibility, encourage deception and trickery in the design and creation of robots,

and facilitate the power of transnational AI-based corporations by enabling them to use robots and AI as a shield for their actions. In short, she argues that allowing this possible morality would "run the risk of encouraging political and economic decisions that could seriously disrupt our ability to govern, as well as our economy." (Bryson 2018, p. 22)

Conservatism, as noted, is the inverse of progressivism. It similarly requires a substantial degree of certainty about the desirability/correctness of current morality vis-a-vis future morality. It assumes that we can use currently accepted moral principles to properly evaluate the (moral?) costs and benefits of alteration in the current moral consensus. Hence, it assumes that we have some reliable metric along which we can evaluate future moral revolutions. But what if those moral metrics are one of things that is open to change? Does that warrant less confidence in our ability to assess the desirability of future moral revolutions? Perhaps. The next four responses try to address this problem in different ways.

Response 3 – ***Meta-normative uncertaintism is warranted — the possibility of future change casts doubt on our current normative principles and this means that we should follow a meta-normative principle that maximises the chances of us doing the right thing now***.

This response draws upon an increasingly popular body of moral philosophy that argues that we should take normative uncertainty seriously (Lockhart 2000; MacAskill, Bykvist and Ord 2020). The gist of this body of scholarship is that we often have reasonable doubts as to which moral principle we ought to follow and we need to factor this into our moral decision-making. For example, consider the following two normative principles:

> **Family First**: It is my duty to look after my closest relatives as best I can and so, therefore, it is permissible, perhaps even obligatory, for me to earn as much money as I can and bequeath it all to my family so that they have the best possible life going forward.
>
> **Charity First**: It is my duty to ensure that the maximum possible number of people live a decent life and so, therefore, once I have provided a basic minimum to my family, I ought to

earn a lot of money and give all my money to effective charities that maximise well-being for the most people.

Which principle ought you follow? Many of us, as a matter of fact, follow the Family First principle, seeing it as a natural consequence of the duties we owe to our closest relatives, but there are utilitarians that argue that we ought to be following the Charity First principle. It's hard to resolve this dispute if you just argue the merits of the respective normative theories (family-first deontologism vs effective-altruist utilitarianism). There are good arguments to be mustered on both sides and people often have a strong attachment to one theory over the other. But if you admit that you have some doubts about which theory is the better one, perhaps there is another way to resolve the dispute. This is the claim made by moral uncertaintists such as Lockhart and MacAskill (to name but a few). They argue that we ought to follow the principle that gives us the best chance of doing the right thing (that maximises expected choiceworthiness, to use the preferred concept of MacAskill, Bykvist and Ord 2020). Applying that reasoning to this particular example, there seems to be a clear asymmetry between the respective moral principles. If I follow Family First deontologism, and utilitarianism is true, then I have failed in my moral duties and made many lives worse than they ought to have been. Contrariwise, if I follow Charity First utiliarianism, and familial deontologism is correct, then have I really done anything equivalently wrong? I have ensured that my family is okay and I have improved the lives of many others. In some ways my life is more commendable than it might otherwise have been. It seems, on reflection, that following Charity First is preferable, if we are unsure about the underlying normative principles.

There is more to meta-normative uncertaintism than that, of course, and the idea has generated a rich and often contentious debate (Harman 2015; Sepielli 2018; Weatherson 2014). We need not focus on that debate here. What's important is what meta-normative uncertaintism can tell us about future moral revolutions. There are two things to bear in mind. On the one hand, appeal to the possibility of a future moral revolution, if supported by good arguments, lends evidential support to uncertaintism. It gives us greater reason to think that our current moral frameworks might be flawed and, so, we shouldn't be as attached to them as we are; and they give us another moral framework (the possible future one) to factor into our normative

calculations. On the other hand, the meta-normative principles developed by moral uncertaintists might give us some guidance as to how to act in the present in light of possible changes in the future.

Some contributors to the ethics of technological disruption have already made use of such meta-normative principles to resolve uncertainty about the properties of technologies. Without wishing to belabour the example, this strategy has been popular in the debate about the moral status of artificial beings. Erica Neely (2014) and Nicholas Agar (2019) have both argued that our uncertainty about the moral status of artificial beings implies a certain normative response. Neely, for instance, argues that we should err on the side of over-inclusivity instead of under-inclusivity when it comes to deciding the boundaries of our moral community. It would be much worse to exclude artificial beings, if they genuinely have moral status, than it would be to include them, if they do not. There is a clear risk asymmetry at work here:

> *"In general, it is wise to err on the side of caution—if something acts sufficiently like me in a wide range of situations, then I should extend moral standing to it."* (Neely 2014, p. 104)

This means we are better off acting as if artificial beings, provided they are sufficiently like us, have moral status than treating them as if they don't. Agar reaches a similar conclusion:

> *"Even if you believe that machines are mindless, you should acknowledge that treating them as if they are mindless risks wronging them. This is so even if you are quite confident these machines lack minds."* (Agar 2019, p. 281)

Citing these examples might create the impression that moral uncertaintism is similar, in effect, to progressivism – it favours the expansion of the moral circle. This is not the case. Uncertaintism is neither progressive nor conservative in nature. Progressivism and conservatism require a degree of certainty about the wisdom of future moral changes. Uncertaintism does not. Consequently, it can be either progressive or conservative, depending on the possible moral changes.

Consider, as an example of this, the implications of meta-normative uncertaintism for privacy-related practices. It's possible that future generations will accept that privacy is dead and that it is not an important social value. They may follow a set of normative principles that disregards privacy in its entirety (livestreaming their daily lives and sharing intimate details with others at all times). But privacy seems important to a lot of people right now and its loss is something that many people lament in the digital era. So how should we behave with respect to privacy in the here and now? Following meta-normative uncertaintism, you could argue that it is much worse to violate someone's privacy, if privacy is an important social value, than it would be to respect privacy, if it is not. In other words, there is a clear risk-asymmetry between privacy-respecting behaviours and privacy-ignoring ones. We don't risk great wrongdoing by continuing to respect privacy; but we do risk great wrongdoing by ignoring it. In this case, meta-normative uncertainism is conservative, not progressive.

Meta-normative uncertaintism is, however, only one possible approach to uncertainty about the moral future. Its chief characteristic is its attempt to control or minimise the normative impact of uncertainty. Other normative responses embrace the uncertainty and take a different form of moral guidance from it.

Response 4 – ***Axiological open-mindedness is warranted, - we should be more open to the possibility that there are other ways of being that enable human flourishing*****.**

In other words, the possibility of future moral revolutions should encourage us to look around and, at least consider, different possible forms of human flourishing.

The idea behind this response is that values are diverse and plural. There are different ways in which we can prioritise and rank these values in our lives. For example, in liberal, capitalist societies, we value things like education, work ethic, individual success, wealth, social consciousness, democratic participation and so forth. We often put a higher ranking on individual values than on communitarian values (though this varies). This results in particular normative priorities and practices: you ought to go to college; you ought to work hard; you ought to try to be an (economic) success. Other societies, take a different approach. Owen Flanagan

(2017), for instance, has argued that Eastern, particularly Buddhist, societies place less emphasis on individualistic values, some even going so far as to deny the reality of the self and the importance of striving to change the world as it is. Western people might find this Buddhist belief system weird and alien; but to the Buddhist it is the other way around. Flanagan urges us to pay more attention to the geographical diversity of axiological frameworks for the good life and to consider the possibility of endorsing another framework.

Where Flanagan urges us to be open to *spatial* diversity in axiological frameworks, we could also be open to *temporal* diversity in axiological frameworks. Instead of just looking around the world at present cultures and their beliefs and practices, we could take inspiration from the past or peer into the future and speculate about possible future cultures and their beliefs and practices. This might warrant an even greater degree of axiological open-mindedness.

In their paper, 'In Defence of the Hivemind Society', Danaher and Petersen take up the latter suggestion. They consider the potential value of technologies that are used to fuse human minds together into a single practical or conscious agent. Such technologies exist in nascent forms in existing brain-to-computer and brain-to-brain communications technologies. Future technologies could enable even greater, friction-free mind fusion. As Danaher and Petersen note, many people are appalled at the prospect of this, but that is usually because they adopt a highly individualistic axiological framework. If they were more axiologically open-minded, they might see things differently:

> "*…there are reasons to think that aspects of the hivemind society are desirable. Pursuing it could enable stronger forms of intimacy, problem-solving and goal achievement, moral enlightenment and moral behaviour, while at the same time leaving open most of the traditional paths to finding meaning in life."*
>
> (Danaher and Petersen 2020, p. 266)

In defending this axiological open-mindedness, Danaher and Petersen make explicit appeal to the historical fact of value change over time, arguing that it provides grounds for thinking that we should not be so wedded to our current values.

Adopting an attitude of axiological open-mindedness requires that we embrace uncertainty about the moral future. We don't assume that we know what the right path is; instead, we are curious to find out what it might be. Another way of looking at it is that our current moral framework might be less robust than we presume and need some reform. The next response takes this into consideration.

Response 5 - ***Moral adaptation is warranted - our existing moral concepts and frameworks are ill-suited to the possible moral future and should be changed, now, to take account of this*.**

In other words, social and technological changes put pressure on some of our beloved moral concepts and principles — privacy, trust, responsibility, humanism and so on — and these concepts and principles require reform or abandonment to cope with the possible change. Additionally, there may be a need for new concepts, norms and values – e.g. a 'right to be forgotten' (Jones 2016), 'right to explanation' (Kaminski 2019), or concepts like 'meaningful human control' (Santoni di Sio and van den Hoven 2018), 'digital wellbeing' (Burr and Floridi 2020) and 'human obsolescence' (Danaher 2022) – to facilitate an adequate moral response to the impending social and ethical challenges that societies are facing. The suggestion here is that we find ourselves in the midst of a period of disruption, triggered by technology or other instigators of rapid social change, which challenge our extant moral and conceptual frameworks. To cope with this disruption, we need to attune our frameworks to the newly emerging technosocial constellation.

This response takes seriously the instability and change that often arises from the application of particular moral concepts and principles to novel contexts. Think of the earlier example of the permissible sex principle. When we first raised that example, we noted that the concept of consent has been refined and reformed in the recent past and that we might expect it to change

again in the future. Likewise, we argued that what counts as sex could change in response to technological developments with the result that the range of activities that needs to be covered by the consent principle could expand in the not-so-distant future. If we hold the existing concept and norms of consent fixed, despite of the changing nature of our sexual practices, then we run the risk that the future will get ahead of us, and the existing understanding of consent becomes inapt and outdated. But if we adapt our moral understanding of consent and sex to take and attune them to the impeding social changes, then we can get ahead of the potential future.

Consider another example. Some scholars have argued that traditional ethical theories, such as utilitarianism, Kantianism, and virtue ethics, are not well-equipped to address contemporary moral challenges. The questions that emerging socially disruptive technologies, such as robotics and AI, pose about moral agency and patienthood are a case in point. As Nyholm (2021) argues, the pillars of traditional theories, such as moral obligation and moral virtue, are tailored to evaluate human-human interaction, but not human-robot interaction. These theories predate the emergence of robots and AI, and it is unclear how they should apply to these new entities. Some new kind of theorizing seems needed to come to terms with the ethics of human-robot interaction.

Similar claims about the mismatch between traditional theories and contemporary challenges have been made in the field of climate ethics. As Jamieson (1992, p. 148) observes, "our dominant value system (...) evolved in low-population-density and low-technology societies, with seemingly unlimited access to land and other resources," and this is reflected in its "attitudes towards population, consumption, technology, and social justice, as well as toward the environment." As a result, our value system needs to adapt; for instance, on Jamieson's (2014) account, developing an attitude of respect for nature is a key to ethics in the Anthropocene. Other climate ethicists have advanced various proposals for new institutions or bodies of supranational governance, to address challenges of global and intergenerational justice (Gónzalez-Ricoy & Gosseries 2016). So apart from adapting our moral concepts, norms and values, adaptation may also be needed of moral and political institutions.

A common thread to these various calls for moral adaptation is the recognition that morality is shaped by a variety of external forces, which call for adaptation in the present. The need for moral revolutions, then, need not imply intrinsic shortcomings of previous moral systems. Instead, each time calls for its own set of norms, values and institutions. Traditional moral theories might have been apt for the ethics of the early Enlightenment, but need to be updated to cope with 21st-century concerns. These theories may not have completely outrun their use, but should at the very least be tailored to a new sociotechnical reality – such that, for instance, the traditional moral virtues should be complemented with "technomoral virtues" (Vallor 2016). Especially under conditions of rapid social change and strong external pressures, such as those exerted by disruptive technologies and climate change, it is likely that moral regress will ensue, unless we actively reshape our moral frameworks.

Response 6 - ***Institutional and technological flexibility is warranted - because a future revolution is possible we should explicitly design technologies and social institutions so that they are flexible and can be adapted to changing values.***

This response is not about recognising the need for adaptation in the present, but about recognising the need for adaptability going forward. The idea is that we may not be able to predict the precise form of a future revolution but we can, at least, accept the possibility and make sure it is easy for future generations to adapt our social and technological systems to new moral paradigms.

The drafters of constitutional texts have long faced this problem. Constitutions do two main things. They set down the fundamental values and rights that will be respected in a given society; and they set down certain rules and procedures for governing that society. Some social theorists argue that constitutions are like precommitment devices: they commit a society to a certain moral-legal framework for the foreseeable future (Elster 1995). In this sense, they are deliberately designed so as to make changes to the social-moral order hard, e.g. changes from democracy to dictatorship. Some constitutions take this need for rigidity to an extreme by stipulating rules that cannot, under the terms of that constitution, be reformed or amended

(Roznai 2016**)**. But most constitutions recognise that there is a need for some adaptability in the future and thus allow for amendment and reform. Nevertheless, different constitutions go about this differently and this results in institutional frameworks can be more or less flexible in their nature.

Consider, for example, the differences in the amendability of the US and Irish Constitutions. The Irish Constitution, which came into existence in 1937, enables any government to propose an amendment to any provision of the constitution and for that amendment to be passed by a simple majority (>50%) vote of the general population (Article 46). The US Constitution, which came into existence in 1789, has a more onerous process for amendment (Article 5). A proposal for amendment must first be passed by a supermajority (two-thirds) vote of both Houses of Congress or by a supermajority (two-thirds) of all state legislatures (which results in a national convention on amending the constitution). The amendment must then be approved by either three-fourths of all state legislatures or three-fourths of all state conventions specifically called for the purpose of approving the amendment.

The US constitution has been amended 27 times in its 230+ year history. This averages at about one amendment every 8.6 years. The amendments are not smoothly distributed over time. The most significant amendments came in the immediate aftermath of the periods of political and social upheaval. The first ten (the Bill of Rights) came within two years of the constitution being ratified and the reconstruction amendments (dealing with slavery and equality before the law) came after the Civil War. At the time of writing, the US constitution has not been amended since 1992. Furthermore, the 1992 amendment was something of an anomaly: it protected the pay of congresspeople and was originally proposed in 1789 at the same time as the first ten. Contrast that with the Irish constitution which has been amended 32 times in its 85+ year history. This averages at about one amendment every 2.6 years. What's more, it has been amended 13 times since the year 2000 and some of its most recent amendments were responses to significant changes in social-moral attitudes (e.g. legalisation of same-sex marriage in 2015 and abortion in 2018).[7]

[7] The figures in this paragraph ignore unsuccessful attempts to amend the constitution in both countries. As it happens, there have been six unsuccessful amendment attempts in both, if by an

Obviously, the amendability of a constitution depends on more than just its formal provisions. It also depends on the separation of powers within the constitutional order, the voting system and the extant political realities. Nevertheless, it seems fair to say that the Irish Constitution, with its relatively easy amendability, is better set-up to facilitate reforms to the political-legal system that match newly emerging moral consensuses. This could be seen to be an advantage because it facilitates moral revolutions without this necessarily entailing violent political revolution. Moral conservatives or precautionaries will, of course, see this as a bad thing, arguing that we ought not to want easy change to an emerging moral consensus (the lessons of Nazi law are important to bear in mind here) but for anyone less certain about the moral future, and more open to the possibility that future revolutions will be closer to the moral ideal than we are in the present, adaptability of this form is welcome.

We can adopt a similar approach when it comes to the design of technologies. It is generally recognized among technology ethicists that technological artifacts and sociotechnical systems can serve to facilitate or inhibit social and moral values, such as efficiency, security, privacy, sustainability, and democracy. This insight has given impetus to a variety of approaches that proactively aim to embody specific values in engineering design (e.g. Friedman & Kahn 2003; van den Hoven et al. 2015). However, the social desirability of values may be subject to change over time. For instance, many of our current energy and transportation systems originated in an era when the value of sustainability was not yet common currency; as a result, societies' current efforts to radically transform these systems to curb CO2-emissions face major obstacles (van de Poel 2021). Rather than encapsulating static values in technology design, it would be preferable to engage in adaptive planning: design plans that are meant to be adapted over time, in iterative response to how the future actually unfolds and how social and moral values change (Taebi et al. 2020). Note that this strategy provides a solution to the epistemic problem of moral revolutions

'unsuccessful attempt' one means a proposed amended put forward for final approval but not approved. There have been many unsuccessful attempts that did not reach this final stage. These figures were excluded because it is not clear that the failure rate is a meaningful bit of information. A high failure rate might be indicative of a lack of flexibility but, then again, a low failure rate might indicate a lack of flexibility too (people don't bother trying to amend the constitution unless they are very sure that the amendment will pass). Given this, it seems to make more sense to focus on the successful attempts.

(we don't know how values will change), yet at the cost of placing a high burden on engineers, regulators, ethicists, to come up with technologies / conceptual frameworks that can cope with unknowns.

Interlude: To this point, the responses we have discussed have had some directive normative significance. In other words, they give suggestions as to what we *ought* to do in response to future moral revolutions. The final two responses are different. They focus on the impact of future revolutions on our beliefs about our moral agency and responsibility. They are less obviously action-guiding, as a result.

Response 7 - ***Increased moral guilt/anxiety is warranted - we should be worried that we are doing the wrong thing, right now, and that we may even be complicit in an ongoing moral catastrophe.***

The idea here is that the epistemic doubts generated by the prospect of future moral revolutions lowers the probability that we are doing the right thing now. This can, in turn, increase our risk that we are causing great harm in the present.

This implication has been developed most fully by Williams (2015) in his article 'The Possibility of an Ongoing Moral Catastrophe'. He offers two arguments for it. The first argument is that past generations were complicit in various moral catastrophes, e.g. the suppression of women, the torture and brutalisation of slaves. Although some people always criticised these practices, most people did not and our awareness of their catastrophic nature was something that emerged slowly over time. But why should we think that we are better than our ancestors? It is likely, following inductivism, that the same thing will happen to us in the future. Our ancestors will look back on what we are doing with a mixture of shock and disgust. Williams's second argument is a bit more complicated and makes use of disjunctive probabilities. He notes that the probability of us making one particular moral mistake right now (e.g. a mistake as to whether worms deserve better moral treatment) could be low, but the probability that at least one of our total set of current moral beliefs is mistaken is quite high. Why? Because the disjunctive

probability (as opposed to the conjunctive probability) of a set of events can be high even when the probability of each member of the set is low. These two arguments should make us worried that we are, right now, complicit in an ongoing moral catastrophe

On the face of it, Williams's arguments can similar to the arguments put forth by the progressivists, which we discussed previously. But Williams's point is different because of his attitude to moral uncertainty. Progressivists have to have a substantial degree of confidence in their current moral beliefs. They have to believe that the arc of moral history is bending in a particular direction and that they can see where it is going. Williams does not share their moral and epistemic confidence. His point is that we cannot easily know what the current moral catastrophe might be. This makes it difficult to take steps to counteract our ongoing moral complicity.

Nevertheless, Williams does derive some additional normative guidance from his argument. He argues that we need to take steps to ensure that we can end any ongoing catastrophe as soon as it becomes apparent to us. This requires free inquiry and intellectual progress (on the assumption that more knowledge increases our likelihood of finding out the moral truth) and a society that can quickly adapt to the new moral consensus:

> *"…[assuming that] taking the necessary steps to prevent future wrongdoing is of comparable importance to avoiding present wrongdoing, it follows that it is very important that any ongoing moral catastrophe we are suffering be brought to an end sooner rather than later. Putting ourselves on a path to make rapid progress, and to take decisive action once we deem such action necessary, should be a major social priority."* (Williams 2015, p. 981)

We see these two suggestions as being similar to the adaptation and adaptability responses discussed previously.

We can, of course, challenge Williams's claim that the possibility of future revolution warrants guilt or anxiety. To be blameworthy for current moral mistakes would, presumably,

require the violation of some epistemic duty with respect to the moral truth. It must be the case that we ought to have known better. While it may be plausible to claim that we ought to know better in relation to some ongoing practices (e.g. factory farming), it's less plausible to claim that we are violating some epistemic duty in relation to more outlandish future moral revolutions. For example, Williams suggests that it could be the case that our physical brains house separate consciousnesses (he cites classic split-brain experiments as providing some evidence for this) and so we are each imprisoning or suppressing conscious minds inside our own bodies.[8] This may, of course, be possible, but it seems farfetched and philosophically contentious. Would it be fair to blame us for not freeing these conscious minds right now?

To be fair, although he does talk about complicity and blame, Williams frames his argument primarily in terms of what future revolutions will do for our moral 'admirability', suggesting that there is something tragic about our current fate. Furthermore, his arguments, and the other arguments countenanced in this paper, do give us some reason to be suspicious about our current moral beliefs and practices. This might imply an epistemic and normative duty to be more circumspect, less self-righteous, and more open to change. Cecilie Eriksen has defended this idea by looking at the history of what she calls 'distorted' moral views. As she points out, many practices that we now deem abhorrent were, in some sense, obviously abhorrent when they were actively endorsed. It's just that we viewed them with a distorted moral lens. We can overcome this distortion:

> *"…there are ways we can come to realise something is ethically amiss with us and with our society. We can become morally less blind, discover our moral mistakes and have the grip of a distorted ethical normativity in our society loosened in various ways: through art, experience, language, nature, culture meetings, coming to care about something, meeting another person, through knowledge of history—all of this, and countless other things, can be sources of genuine ethical critique and 'resistance to or acting as usual', as well as reservoirs of ethical creativity.*" (Eriksen 2020, p. 120)

[8] The Apple+ TV show, *Severance*, can be viewed as a fictional representation of this thought experiment.

Response 8 - ***Moral agency is undermined/impossible - the fact that moral beliefs and practices can change makes it difficult to function as a moral agent and since moral agency is a good, this harms us in the here and now*.**

In other words, our ability to function as moral agents depends on our ability to know and be responsive to moral reasons. The fact that those moral reasons could change, or might be wrong, makes it difficult to know what morality demands of us, and impedes our ability to function as moral agents – either during some constrained period of disruption, or indefinitely.

This response has been discussed in relation to the impact of disruptive technologies on our moral practices. Baker, for instance, has discussed the impact of mechanical ventilation on our beliefs and practices associated with death and organ transplantation (Baker 2019; Nickel 2020). This technology enabled doctors to keep people alive beyond the point at which they would previously have been declared dead. This created moral uncertainties. Was a person on mechanical ventilation but without brain activity dead? Was it okay to withdraw mechanical ventilation from such a person or would this be equivalent to killing them? Could they be kept alive, 'let die' and have their organs harvested for transplant? Eventually norms were established that resolved these uncertainties (answers to the three questions became, in essence: yes, no, it depends), but initially there was doubt and confusion.

This, according to Nickel (2020), is not an unusual phenomenon. Disruptive technologies often create these moral uncertainties (Nickel cites several examples, including, most recently, the uncertainty around the value of collecting and sharing masses of health data). This harms our agency because we become unsure whether what we are doing is good or bad, right or wrong:

> *"…an individual who does not know her own moral obligations (rights, responsibilities) cannot properly exercise moral agency or act rightly, which is a serious setback to her interests as a moral agent. She also cannot properly form moral expectations of others or hold others morally accountable for their actions."* (Nickel 2020, p 261).

The harm-to-agency discussed by Baker and Nickel relates to relatively discrete domains that are in the midst of some ongoing moral reform, viz the domains of human activity affected by particular disruptive technologies. Various other potentially disruptive technologies, such as autonomous weapon systems, solar radiation management, or the artificial womb, may similarly give rise to harmful uncertainty in defined domains of inquiry. But abstracting from these domain-specific harms-to-agency, could the general possibility of future moral revolutions also induce a more generalised form of harm-to-agency?

An analogous question has long been debated by philosophers of religion. According to a classic argument, the occurrence of apparently gratuitous evil or suffering in our world provides evidence for the non-existence of God. Examples of such suffering could include the torture and rape of innocent children, the genocide of entire populations of people, and the sufferings of wild animals at the hands of predators and natural disasters. The plausibility of this evidential argument from evil depends, however, on whether these events are genuinely gratuitous. If they serve some greater moral purpose (e.g. the salvation of our souls) then they may, contrary to appearances, be good, not evil and so not provide evidence against the existence of God. While some theists argue try to make the case that particular evils do serve some greater goods, others are more non-committal. According to the philosophical position known as sceptical theism, there are various reasons for thinking that God's ways are mysterious to us and we, humans, are ill-equipped to know whether particular events do or do not serve some greater purpose. We should, therefore, suspend judgment as to whether there are gratuitous evils in our world. Defenders of the argument from evil have, however, countered this by arguing that if we suspend judgment in this way, it has devastating consequences for our moral agency. Why is this? Because if gratuitous evils might serve some greater purpose, but we cannot know what that is, then we also cannot know if our intervention into the world to alleviate or prevent that gratuitous evil undermines the potential greater moral purpose. This leads to moral scepticism and moral paralysis, which harms our moral agency (Danaher 2014).

The full nuances of this religious debate lie beyond the scope of this paper. The example is raised, however, to consider whether believers in future moral revolutions are in a similar predicament to sceptical theists. Must they suspend judgment as to the moral quality of their

actions? Will they end up in an equivalent state of moral paralysis? The answer will depend on the scope of their uncertainties about the moral future. If they are uncertain about particular moral concepts or practices, then they may not be paralysed when it comes to making moral decisions in general. They could be quite confident that it is wrong to harm a sentient being, for example, while being uncertain as to who counts as a sentient being. This will allow them to remain confident in many of their day-to-day moral judgments. The use of meta-normative decision rules might further reduce the paralysis by enabling them to err on the side of caution. But if the scope of their uncertainty is very wide — if they come to doubt all basic moral judgments and concepts — then they may enter a state of general moral paralysis: unable to decide what to do.

That said, whether general moral paralysis is warranted right now will depend on whether there is some important causal link between decisions made in the here and now and the future moral revolution that would affect our moral assessment of those decisions. For example, it is possible that future technologies could enable us to wipe clean the memories of all sentient beings, immediately after they experience intense pain, such that they suffer no ongoing trauma or other psychological distress. We could also develop technologies that repair any physical damage resulting from that pain. Could this result in a world in which harming sentient beings without good cause is permissible, at least on some occasions? Maybe. But the possibility of this future technology doesn't imply that we can start harming them without good cause today. The mere possibility generates no moral paralysis in the present. Contrariwise, impeding research into genetic engineering today because you think it is wrong to 'play god', when future developments in that technology might end many forms of suffering and enhance human flourishing, would be different.

This concludes our discussion of the eight normative responses to future moral revolutions. Table 1 summarises the key points from the discussion.

Table 1 The Eight Responses to Future Moral Revolutions

	DEGREE OF EPISTEMIC (UN)CERTAINTY – I.E. (UN)CERTAINTY ABOUT THE CONTENTS OF FUTURE MORALITY	**DEGREE OF MORAL (UN)CERTAINTY** – I.E. (UN)CERTAINTY ABOUT THE CORRECTNESS OF CURRENT MORALITY	**ANTICIPATION OF MORAL PROGRESS / REGRESS –** WILL THE MORAL REVOLUTION BE A CHANGE FOR THE BETTER?	**NATURE OF IMPLICATIONS** – WHAT KIND OF RESPONSE DO MORAL REVOLUTIONS CALL FOR?
Response 1 – Progressivism/accelerationism is warranted	**High degree of epistemic certainty:** We can discern the outlines of the impending revolution.	**High degree of moral certainty**: The revolution amplifies an aspect of social morality that revolutionaries take to be correct.	**Progress** will ensue, if the moral revolution is pursued. We should strive for change.	**Practical:** The revolution should be accelerated.
Response 2 – Conservatism is warranted.	**High degree of epistemic certainty:** We can discern the outlines of the impending revolution.	**High degree of moral certainty**: We can rely on accepted principles to evaluate the cost and benefits of altering the current consensus.	**Regress** will ensue, if we do not resist the revolution.	**Practical:** The revolution should be halted.
Response 3 – Meta-normative uncertaintism is warranted	**Medium degree of epistemic certainty**: We don't know which moral principles will be vindicated as correct, but we are familiar with the decision-options.	**Medium degree of moral certainty**: We don't know which of our current moral principles are correct, but we are familiar with the decision-options.	**Non-committal**	**Practical:** The prospect of revolution calls for strategies to maximise expected choice-worthiness.
Response 4 – Axiological open-mindedness is warranted	**Low degree of epistemic certainty:** We can be confident *that* future moral revolutions will occur, but we know little about their contents.	**Low degree of moral certainty**: Our current axiological framework may be justifiable, but there may well be other frameworks that are equally justifiable, or perhaps preferable.	**Progress** may well ensue from axiological experiments.	**Practical:** We should become more willing to entertain different moral possibilities.
Response 5 – Moral adaptation is warranted	**Medium degree of epistemic certainty:** We have a fairly good grasp of the nature of future challenges, and the future moral frameworks needed to face them.	**Medium degree of moral certainty**: We know that our current moral concepts and frameworks are inadequate in various respects.	**Regress** is likely to ensue, unless we make deliberate efforts to adapt our moral frameworks.	**Practical and conceptual:** We should re-engineer our moral concepts, as well as practices and institutions.
Response 6 - Institutional and technological flexibility is warranted	**Low degree of epistemic certainty**: We know that future revolutions may occur, but we are unfamiliar with their contents.	**High degree of moral certainty:** If we create flexible moral frameworks, these may well be correct.	**Non-committal**	**Practical and conceptual:** Moral concepts and institutions should be designed to be flexible.
Response 7 - Increased moral guilt/anxiety is warranted	**Low degree of epistemic certainty:** It is very likely that accepted moral standards will change, but we don't know in which direction.	**Low degree of moral certainty:** The probability that some of our current moral beliefs is mistaken is high, but we don't know which ones.	**Progress** of some sort will probably ensue, if history is any guide to future moral change.	**Epistemic:** There is little we can do to counteract the current moral catastrophe; we should, however, become less self-righteous.
Response 8 - Moral agency is undermined/impossible	**Low degree of epistemic certainty:** Either with respect to some specified domain, or with respect to morality in general, we don't know how moral revolutions will disrupt these.	**Low degree of moral certainty:** Either with respect to some specified domain, or with respect to morality in general, we are unsure whether what we are doing is good or bad, right or wrong.	**Regress** ensues from the revolution, at least during the period of moral disruption.	**Conceptual:** Uncertainty paralyzes and harms our moral agency during the period of disruption; we should recognize conceptual ambiguity and its associated impairment.

5. Do Metaethics Matter?

We have identified eight views about the appropriate normative response to future moral revolutions: views that prescribe which actions, beliefs, and attitudes emerging moral revolutions – or the anticipation thereof – should engender. Apart from normative responses, however, one might also wonder whether future moral revolutions could have any meta-normative implications – i.e. implications for how we understand the nature of the normative domain. Does the prospect of future moral revolutions commit one to a specific view about the nature of moral reality and truth? Or are the views we have discussed compatible with a variety of metaethical commitments?

Modern metaethics is a complex field of inquiry, with many distinct views having been carved out and defended by authors over the years. These include natural and non-natural moral realism, quasi-realism, fictionalism, emotivism, constructivism and relativism — to name but a few (Miller 2014). Each of these positions, furthermore, comes with a variety of more specific versions, advanced by different authors. A comprehensive review of how these positions relate to moral revolutions could be a worthwhile scholarly endeavour; in this paper, however, we cannot do justice to its full complexity. Instead, we will restrict ourselves to a metaethical debate that seems particularly pressing in the face of moral revolutions, as it pertains to the immutability of moral truths: the debate between moral realists and antirealists.

According to moral realism, there is some objective moral truth (or set of truths) and this truth is not relative to our own beliefs and commitments (it is mind or judgment-independent). In other words, the moral truth is 'out there' waiting to be discovered. Realism naturally lends itself to the view that moral truth does not change over time. Our theories might change, but the truth does not.

Let's consider a realist who is committed to some degree of epistemic success: i.e. she grants that moral agents frequently make mistakes, but assumes that we are nevertheless capable of at least somewhat reliably tracking mind-independent moral truth(s). Is the prospect of future moral

revolutions compatible with this realist assumption? We believe so – and on two different realist models. On the first model (e.g. Huemer 2016), what changes in moral revolutions are our attitudes towards the moral truth, but not the truth itself. Change might occur in virtue of a better grasp of the moral truth: our individual or social moral beliefs and commitments were initially misaligned with the moral truth, but moral revolutions bring us closer to moral reality. Conversely, realists might also argue that moral revolutions serve to cloud our moral judgements: current society has managed to approximate the moral truth, but the revolution will lead us astray. Hence, realism is compatible with progressivism as well as conservatism – and also with the other implications we have discussed. After all, each of these implications may be understood as (merely) presupposing that moral revolutions change social morality – and societies' success at grasping mind-independent moral truths – but not moral reality itself.

On the second model, the realist maintains that objective moral truths are subject to change. New moral truths might emerge over time, reflecting a change in the underlying moral reality. This second model might appear to be more difficult to square with a realist view, as moral realism is sometimes associated with the doctrine that moral truths are unchanging and timeless — they hang out there waiting to be discovered, perhaps in some platonic realm. Yet the view that objective moral truths can be subject to change has recently been defended by scholars traditionally associated with the realist camp (Raz 2017; Nagel 2021). For instance, Nagel argues that:

> *"We should not think of [practical] reasons as like chemical elements waiting to be discovered. Rather, facts about reasons are irreducibly normative truths about ourselves and other persons, and realism is simply the position that their truth does not depend on our believing them. (…) The existence of a reason in the present need not imply that the same reason has existed at all times. Whether it existed in the past (…) will depend on the circumstances then, and what considerations were available or accessible to persons at that time*." (Nagel 2021, p. 84)

As a historical illustration of this claim, Nagel argues that core political freedoms, such as the freedom of expression, could only be articulated once the idea and institution of a liberal

democracy began to take footing in society. Before the emergence of the liberal state this freedom could not have been conceived of and articulated, and there were no objective moral reasons that pertained to it. This type of foundational moral change may also occur through the interplay between technology and society. Consider the example of mechanical ventilation and the ethics of killing. It could be the case that prior to the invention of that technology there was no moral fact of the matter as to whether withdrawing ventilation was the equivalent to killing. But once the technology existed, and this became a live question, answering it generated a new moral truth. This truth may have been derived from some pre-existing set of moral truths, but it stands, in its own right, as a new independent moral truth. In other words, moral reality may not be a static, never-changing phenomenon. It may grow and perhaps contract in light of our new techno-social realities.

Now let's turn to antirealist views, according to which there is no mind or judgment-independent moral truth. Antirealism is typically spelled out in terms of some form of moral relativism: moral judgements are only ever true relative to some existing set of beliefs and commitments. Relativism lends itself to the view that moral truths can vary significantly across space and time. That said, there are more or less extreme versions of relativism. You could be an individualist moral relativist, holding that moral truth is relative to your own desires or motivations (a form of moral egoism). You could be a cultural moral relativist, holding that moral truth is relative to the prevailing moral consensus in a given culture (e.g. in a Christian moral culture, the claim that premarital sex is impermissible is true, but in a non-Christian one it need not be). Or you could be an ideal deliberation or ideal observer relativist, holding that moral truth is relative to the view that would be endorsed under certain ideal conditions (open debate, deliberation, sharing of information etc). This last view can end up being quite similar, in practice, to realism. The theoretical distinction, however, remains: all antirealists maintain that there is no mind or judgment-independent moral reality.

What would antirealists make of the discussion in this paper? An individualist or a strong cultural relativist might be dismissive of much of it. If moral truths are always relative to individual desires and/or prevailing moral cultures, then there is no need to worry that we might be getting morality wrong or that we could progress to some better moral future. Our job is just

to work out what the prevailing moral consensus is. The prospect that this consensus might one day be revolutionized does not have any implications for cultural truths in the present; the suggestion that we are presently complicit in an ongoing moral catastrophe is hard to entertain.

Ideal deliberation theorists, by contrast, would be in a different position. They might have reason to worry that the prevailing moral consensus (past or future) strays from what would be endorsed under ideal circumstances. This would make the eight normative responses identified above more salient to them. Furthermore, antirealists might take the fact of past moral revolutions, and the possibility of future ones, as evidence in favour of their metaethical commitments, and could argue that moral revolutions are more likely on relativism than they are on realism (Hopster 2020; Cofnas 2020). Realists can, however, rebuff this argument by pointing out that just because morality is real it does not follow that we are good at figuring it out (Huemer 2016), or side with Nagel (2021) in holding that objective reasons are not static (or both). Similarly, they could argue that morality is real but moral values are plural and so some diversity in moral paradigms is to be expected (e.g. Flanagan 2017).

To conclude, our initial survey suggests that there is a fair amount of wiggle-room for metaethicists of different stripes to accommodate the different normative responses to future moral revolutions. Metaethical views that relativize moral truth to personal or cultural norms constitute an exception: these views tend to find it difficult to make room for the notion that we can make moral mistakes, and as a corollary they have difficulty making sense of the progress, regress, and uncertainty that future moral revolutions might engender.

Yet there are various other metaethical views that can make room for the normative implications we have discussed, and in different ways. Hence, our normative implications may be understood against different metaethical background assumptions, which may influence their interpretation in turn. For instance, on a realist interpretation, one might endorse axiological open-mindedness by arguing that we are likely to be still far away from the moral truth, whereas future societies might be able to get much closer to it. On an antirealist interpretation, one might also endorse axiological open-mindedness, yet with a different justification: historical discussions about what is valuable have remained far from satisfying the standards of ideal

deliberation, and as a result, we should expect that important axiological truths have yet to be articulated.

6. Conclusion

Answering the question how our grandchildren will judge us is not merely a matter of anticipating the future, but entangled with normative judgements we make in the here and now. We have argued that addressing the normative implications of future moral revolutions is worthwhile for practical and scholarly reasons. We have identified eight distinct normative implications of such revolutions, each of which is modulated by our degree of moral and epistemic certainty in the present. We have also argued that these normative implications remain salient on a wide range of metaethical views. There are many important threads emerging from our analysis that could be picked up by future scholarship. In particular, the identification of further normative implications (if they exist), a more fine-grained analysis of the eight implications in the context of specific debates about future moral change, and a more thorough review of the metaethical consequences of moral revolutions would seem desirable.

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Highlights:

- Addresses a neglected topic in futurism and foresight studies: the normative significance of future changes in social morality.
- Identifies and assesses eight normative implications of future moral revolutions, several of which have direct relevance for present day decision-making and institutional design.
- Provides a systematic and synoptic overview of the existing literature on the normative significance of future moral change
- Addresses the role of judgments of certainty and uncertainty in our attitude toward future moral change.