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Routes to bioethical progress, its limits, and lessons from moral philosophy**

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**CHARTING MORAL PSYCHOLOGY'S
SIGNIFICANCE FOR BIOETHICS
ROUTES TO BIOETHICAL PROGRESS, ITS LIMITS,
AND LESSONS FROM MORAL PHILOSOPHY**

– Michael Klenk –

Abstract: Empirical moral psychology is sometimes dismissed as normatively insignificant because it plays no decisive role in settling ethical disputes. But that conclusion, even if it is valid for normative ethics, does not extend to bioethics. First, in contrast to normative ethics, bioethics can legitimately proceed from a presupposed moral framework. Within that framework, moral psychology can be shown to play four significant roles: it can improve bioethicists' understanding of (1) the decision situation, (2) the origin and legitimacy of their moral concepts, (3) efficient options for implementing (legitimate) decisions, and (4) how to change and improve some parts of their moral framework. Second, metaethical considerations suggest that moral psychology may lead to the radical revision of entire moral frameworks and thus prompt the radical revision of entire moral frameworks in bioethics. However, I show that bioethics must either relinquish these radical implications of moral psychology and accept that there are limits to progress in bioethics based on moral psychology or establish an epistemic framework that guides radical revision.

Keywords: bioethics; moral psychology; debunking arguments; metaethics; interdisciplinarity; activism

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In 1997, Dolly, the cloned sheep, captured the public's imagination. Some scholars recorded strong emotional aversions to the possibility of human clones, which then seemed within reach, and brought their emotional reactions to bear on the debate about the moral permissibility of cloning. The legal scholar William Ian Miller wrote:¹

I am, it should by now be clear, disgusted, even revolted by the idea of cloning: not just the idea of cloning humans, but the idea of cloning sheep too. I am quite frankly disgusted by Dolly...

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¹ Bloom (2004).

Miller's disgust at cloning guided his normative argument against it. Leon Kass (1997) famously defended the normative significance of disgust – there is “wisdom in repugnance”, he argued.² Remarkably, Kass claimed that an empirical fact (the fact that Miller felt disgusted) had normative significance in a bioethical debate.

Kass's willingness to consider psychological facts as normatively significant would be well received in contemporary moral philosophy. Experimental moral philosophers and psychologists are revealing how people make and experience moral judgments using a variety of empirical methods such as observations, experiments, and brain imaging, to name but a few. Some scholars maintain that some such moral psychological findings question the trustworthiness and authority of many intuitive ethical responses³ or undermine particular philosophical theories about the nature of morality.⁴

At the same time, anyone remotely familiar with moral philosophy will be aware of warnings against deriving an ‘ought’ from an ‘is’. The fact that things are, or have been, a particular way does not settle the question of how they ought to be. Consequently, the rise of empirical moral psychology brought with it a lively debate about its normative significance in moral philosophy (normative ethics and metaethics), where a ‘sceptical’ view has taken hold. In normative ethics, the normative significance of empirical findings is vehemently disputed because arguments that invoke moral psychology can be shown to ultimately require controversial normative assumptions too.⁵ In metaethics, the debate about the extent to which moral psychology has radical revisionary implications (to wit, its potential for changing fundamental presumptions about morality) can be shown to depend on unresolved epistemological questions.⁶

However, at present, there is no overarching framework that organises and explains the normative significance of empirical moral psychology for bioethics more generally in light of the debate in moral philosophy. Of course, there is substantial work on the significance of moral psychology for particular cases⁷ and attempts to classify the impact of empirical work on bioethics.⁸ But these contributions either do not address the significance of moral psychology on a systematic level or fail to take into account recent lessons from moral philosophy.

In this paper, I apply insights from the moral philosophical debate to the recent discussion about the normative significance of moral psychology for bioethics to organise and illuminate the “clouded relations” between bioethics and empirical moral psychology.⁹ I chart the normative significance of moral psychology for bioethics by describing what moral psychology can and cannot do for bioethics. On the positive side, I defend four concrete, significant uses of moral psychology in bioethics. Importantly, I will show that these uses are legitimate and significant for bioethics *even if* sceptical arguments about the normative insignificance of moral psychology in normative ethics

² Kass (1997).

³ Greene (2014); Sinnott-Armstrong (2006).

⁴ E.g. Haidt (2001); Prinz (2007).

⁵ E.g. Berker (2009); Clipsham (2014); Paulo (2019).

⁶ Klenk (2018); Wielenberg (2016).

⁷ E.g. May (2016a; 2016b).

⁸ E.g. Musschenga (2005); Kon (2009); Vries, Gordijn (2009).

⁹ Borry, Schotsmans, Dierickx (2005).

succeed. On the negative side, I will argue that the normative significance of moral psychology for bioethics is limited by raising a challenge that is informed by recent insights from moral philosophy. In short, in moral philosophy, moral psychology may lead to a radical revision of entire moral frameworks. However, bioethics must either relinquish the radical implications of moral psychology or establish an epistemic framework that guides radical revision.

The paper is structured as follows. In section 1, I establish some common ground and introduce key terms used in the debate. In section 2, I recap sceptical arguments to the effect that moral psychology is *normatively insignificant in normative ethics*. I accept this sceptical conclusion for the sake of argument and then show, in section 3, that it *does not* extend to bioethics. Hence, even if moral psychology is insignificant for normative ethics, it may be significant for bioethics. In section 4, I demonstrate that moral psychology can indeed play a highly significant role within the normative frameworks presupposed by bioethics. I describe and defend four concrete ways in which *moral psychology is normatively significant for bioethics*. Finally, in section 5, I describe the limits of using moral psychology in bioethics. In short, moral psychology may provoke us to change some or all of our moral principles or decision guidelines. Radical revision, i.e. changing *all* moral principles or decision guidelines, would lead to the most consequential impact of moral psychology on bioethics. However, I argue that this use of moral psychology is out of reach for bioethics.

The paper thus connects recent findings from 'theoretical' moral philosophy (comprising normative ethics and metaethics) with bioethics and should be of interest to anyone concerned with the scope of the normative significance of moral psychology for bioethics.

1. Bioethics and moral psychology

Before turning to the central part of the argument, it is essential to clarify its principal terms. In particular, I explain the significance of considering bioethics as a *practically committed* discipline and define 'empirical moral psychology' and 'normative significance' for the purposes of this paper.

In his article 'From Metaethicist to Bioethicist', Baker (2002) describes one of the core aspirations for the founders of bioethics: to escape the minute theoretical squabbles of disciplinary philosophy and instead to turn to issues of practical import.¹⁰ Bioethics shares its *practical orientation* with subfields of practical ethics, which arose as a response to increasing neoliberal demands to demonstrate the societal relevance of academic research.¹¹ Bioethics, as well as environmental ethics, engineering ethics, and computer ethics, thus aims to make an impact beyond the confines of academic journals, and this is evident in virtually all self-descriptions of bioethics.¹²

However, in an insightful article that addresses the development and success of practical ethics, Frodeman, Briggie, Holbrook (2012) suggest that bioethics is not only *practically oriented*, like other subfields of practical ethics, but what might be called *prac-*

¹⁰ Baker (2002); cf. Callahan (1973).

¹¹ Frodeman, Briggie, Holbrook (2012).

¹² Cf. Düwell (2013); Jonsen (2003); Callahan (1973).

tically committed.¹³ That means that bioethics primarily aims to effect legitimate decisions in practice *and devotes significant effort to making that happen*.¹⁴ For example, bioethics addresses a non-disciplinary audience, i.e. it speaks to non-philosophers and practitioners in the field, it largely avoids a top-down approach where high theory is applied to the decision situation, and it involves a continuous and practical dialectical back and forth between theory and practice.¹⁵ Some infer from the practical commitment of bioethics a professional obligation to engage in or support *activism*.¹⁶ There is some debate, though, about whether such an obligation exists, and what it entails.¹⁷ But need not engage in that debate in order to infer what bioethics should *not* do, given its aim: to focus predominantly on what we ought to *think* at the expense of finding out and effecting what we ought to *do*. We can now ask the question that this paper address in a new way: what is the normative significance of empirical moral psychology for bioethics if it is to be understood as a practically *committed* discipline?

This leaves 'empirical moral psychology' and 'normative significance' to be clarified further. Empirical moral psychology provides us with particular empirical facts. It is the empirical study of human functioning in moral contexts, specifically the study of moral experience and behaviour, its development, and its internal and external causes and conditions.¹⁸ It leaves the matter of how to define moral phenomena open, but any attempt in that direction would be beyond the scope of this paper.

I understand empirical findings as having 'normative significance' if those new empirical findings meet two conditions:

1. They challenge our moral principles and decision guidelines *or*
2. They make a difference to what we ought to do in a given decision situation, insofar as we hold some set of moral principles or decision guidelines fixed in that decision situation.¹⁹

Consider a simple example that illustrates how empirical findings make a difference to what we ought to do in a given decision situation. Suppose that we ought to do only as the law commands. We all assume that the law allows doing x. However, we learn that the law does not allow x. So that piece of information is normatively signifi-

¹³ Frodeman, Briggie, Holbrook (2012).

¹⁴ Naturally, the distinction drawn by Frodeman, Briggie, Holbrook (2012) does not neatly, strictly, and universally separate bioethics from other fields of practical ethics. Still, the distinction provides a useful heuristic for describing the aims of bioethics as a discipline.

¹⁵ Frodeman, Briggie, Holbrook (2012). Parallel developments toward practical commitment exist in other fields of practical ethics too. See, for example, the proposal for a practically committed and informed business ethics in Beschoner (2006). Bioethics arguably veered off toward a less practically committed model at times, but, as Borry, Schotsmans, Dierickx (2005) describe, it generally and reliably returned to its practical commitment.

¹⁶ See the contributions in Draper, Moorlock, Rogers et al. (2019).

¹⁷ Draper (2019); Lindemann (2019).

¹⁸ Doris, Stich, Philips (2020). Naturally, this includes work in various (sub)fields of psychology and neuroscience but it also includes some work in the social sciences, notably sociological, (behavioural) economical, and anthropological work that gives us insights into the moral experience and behaviour of people cf. Keane (2016); Curry (2016).

¹⁹ Thanks to an anonymous referee for prompting me to clarify this point. As I show below, empirical findings are normatively significant *for bioethics* mostly in the second sense.

cant, because it makes a difference to what we ought to do.²⁰ Similarly, suppose we learn that what seemed like an *x* is really a *y*, and the law forbids doing *y*. That information is normatively significant as well because it makes a difference to what we ought to do.

With these clarifications on the table, we can reformulate the guiding question one final time as follows: do the findings of empirical moral psychology make a difference to what one ought to do in bioethics as a practically committed discipline? In what follows, I will show that the answer is 'Yes' because negative assessments of moral psychology's significance for normative ethics do not carry over to bioethics.

2. The normative insignificance of moral psychology for normative ethics

Moral psychology has often been used in attempts to settle long-standing normative disputes,²¹ but normative ethicists have frequently dismissed such attempts. Many are *sceptics* about the normative significance of moral psychology.²²

To illustrate an argument in normative ethics 'from moral psychology' (to wit, an argument that invokes descriptive premises informed by moral psychology), consider a brief outline of the much-discussed anti-deontological argument of Joshua Greene.²³ Greene argues, based on fMRI and reaction-time data from experiments, that some types of moral judgements (which he calls "characteristically deontological moral judgements") are based on predominantly emotional processes. Furthermore, Greene argues that such emotionally-grounded moral judgements are suspicious and should be distrusted.²⁴

The moral philosophical reception of Greene's argument (and others relevantly like it)²⁵ has largely been sceptical, in the sense that the normative significance of moral psychology is dismissed.²⁶ It can be shown that Greene's anti-deontological conclusion depends on normative intuitions about what counts as morally irrelevant factors.²⁷ Thus, Greene's argument can be summarised as follows:

1. A set of descriptive premises that invoke moral psychology.
2. A set of moral premises.
3. A moral conclusion.

²⁰ Concerning 'ought', objectivists can assume that we learn an objective truth when we learn that the law does not allow *x*.

²¹ E.g. Ruse, Wilson (1986); cf. Paulo (2019).

²² Berker (2009).

²³ Greene (2008; 2014), Greene, Sommerville, Nystrom et al. (2001).

²⁴ Greene (2014).

²⁵ Similar examples concern consistency reasoning, cf. Campbell, Kumar (2012), and the debate about the normative significance of disgust, cf. Kelly (2011).

²⁶ Some have interpreted Greene's argument 'from moral psychology' as an attempt to uproot a philosophical, normative view (deontology, in Greene's case) from purely descriptive, moral psychological bases. Such an interpretation is uncharitable because it would ascribe to proponents of such arguments an illegitimate crossing of the is-ought gap. Arguments of this kind are primarily responsible for the 'dreadful reputation' enjoyed by empirical moral psychology in some philosophical circles today, although inferring an 'ought' from an 'is' via an implicit or explicit normative premise is commonplace (cf. Doris, Stich, Philips et al. (2020). See Vries, Gordijn (2009) for a relevant discussion in bioethics.

²⁷ Paulo (2019). See Klenk (2019b) for a meta-analysis of the situational factors at play in sacrificial dilemmas.

Hence, Greene's normatively significant conclusion that deontological judgements ought to be distrusted is informed by moral psychology. But it ultimately and crucially depends on philosophical, normative intuitions. Because of the ultimate importance of certain normative assumptions in arguments 'from moral psychology', several scholars have argued that moral psychology does little important work in these arguments.²⁸ Ultimately, the argument goes, moral psychology does not help us find out what we ought to think about morality without presupposing some important normative premises itself.

Therefore, moral psychology has frequently been taken to be normatively insignificant for normative ethics. Though the validity of the sceptical conclusion merits further discussion, I will assume it for the sake of argument. My focus will be on assessing whether it carries over to bioethics and the answer will be 'No.'

3. Moral psychology works for bioethics, even if it fails in normative ethics

I now demonstrate that sceptical assessments of moral psychology's significance in normative ethics *do not* extend to bioethics. So, *even if* it is true that moral psychology is *normatively insignificant for normative ethics*, moral psychology can *still be normatively significant for bioethics*.²⁹

The inclusion of moral premises leads to the dismissal of moral psychology as ultimately normatively significant in moral philosophy. Understanding why that is the case will help us see why the same sceptical conclusions do not extend to bioethics.

Normative ethicists are primarily concerned with what we ought to believe about morality. For example, consider G.A. Cohen's characterisation of normative philosophy as being concerned "not with what we should do but what we should think, even when what we should think makes no practical difference."³⁰ Irrespective of the sensibility of such an approach to normative ethics, the commitment to determining what we should think explains the verdict that moral psychology is normatively insignificant for normative ethics.³¹ Normative assumptions about what we should think are *required* in an argument from moral psychology, but those assumptions are precisely what normative ethics aims to scrutinise. Assuming the disciplinary aims of normative ethics – as set out by Cohen – the dismissal of moral psychology may seem reasonable from a normative ethics perspective.

However, the sceptical conclusion about the normative significance of moral psychology *does not* extend to bioethics. First, bioethics is primarily concerned with what ought to be done, rather than what we ought to think (as discussed in section 1 above).

²⁸ Paulo (2019); Berker (2009); Clipsham (2014).

²⁹ Useful critical interpretations of the sceptical conclusion that I will assume for the sake of argument can be found in Hopster (2018) for an argument in metaethics and in Lindauer (2019) for normative ethics more generally.

³⁰ Cohen (2003).

³¹ One need not accept, however, that normative ethics is primarily about what one ought to think. It is sensible to suppose, for example, that learning how to do what one ought to do is also a part of normative theorising (as an anonymous referee suggested). Insofar as one assumes this more inclusive picture of normative theorizing, one could nonetheless follow my analysis in sections 3 and 4, but my challenge regarding unleashing the full potential of empirical moral psychology presented in section 5 would still stand.

Second, as Childress (2007) argues, bioethics virtually always operates within a framework of normative assumptions about applicable moral principles,³² rules,³³ virtues, or strategies for “moral diagnosis” in casuistry approaches.³⁴ Notwithstanding the important differences between these different approaches, I will use ‘normative commitment’ or ‘normative framework’ as umbrella terms to refer to the normative assumptions that guide bioethical work. As methodological discussions about *adequate* approaches to bioethics indicate,³⁵ there is a sense in which a given framework may be *better* than another, even if there is no single *best* framework. Within such a framework, moral psychology can make a tremendous difference to what ought to be done in a bioethical case.

Therefore, bioethicists should not accept the sceptical conclusion about the significance of moral psychology from normative ethics. On the contrary, bioethics has much to gain from moral psychology, precisely because it can often make a difference to what ought to be done in a bioethical case, which means that moral psychology is normatively significant for bioethics.

4. Four significant uses of moral psychology in bioethics

Moral psychology can be highly significant for bioethics. To illustrate this point, consider an analogy with an internet search engine, like Google Search. The results of your search query depend on two factors: Google’s database (i.e. all website content indexed by Google) and the algorithm for identifying, ranking, and presenting matches within the database with your query. Most of the time, Google Search works pretty well. That is, until you are looking for something that is not in the database. For example, suppose Ken Kunz the trapper lives off the grid in Alaska and has thus far managed to leave no trace of himself online or offline. Try looking him up on Google – you will find nothing on that Ken Kunz, and no fixing of Google’s search algorithm can change that. Instead, new information must be added to the database.

Likewise, bioethicists require adequate factual information to answer bioethical questions.³⁶ In recognising the importance of descriptive facts for bioethics, and acknowledging the analogy with a search engine, one need not assume that there is a unique set of truths about physical or social reality that moral psychology describes, nor that there is a unique method used in bioethics. There can be various equally viable bioethical approaches, but as pointed out above, all of them will operate within certain normative assumptions (analogously, according to the search engine’s algorithm) that guide the evaluation of the case (analogously, according to the search engine’s database).

Having defended in the previous section the negative conclusion that scepticism about moral psychology does not extend from normative ethics to bioethics, I will now defend some positive points. I will systematise and distinguish four different ways in which moral psychological insight is normatively significant in bioethics.

³² E.g. Beauchamp, Childress (2013); Beauchamp, Rauprich (2016); Veatch (1981).

³³ Clouser, Gert (1990).

³⁴ E.g. Jonsen, Toulmin (2012); cf. Arras (1991).

³⁵ E.g. Ives, Draper (2009); Singer, Viens (2008).

³⁶ Düwell (2013).

4.1. Actual-state analysis

Moral psychology increases our understanding of the non-moral facts that are relevant to a bioethical decision. I will refer to this as 'actual-state analysis' because bioethicists can use moral psychology to more accurately understand the actual or current state of a decision situation.

For example, van Thiel & van Delden (1997) use qualitative measures to establish the extent to which Dutch nurses act in compliance with the demands of patient autonomy.³⁷ Duke & Thompson (2007) use quantitative measures to uncover the preferences of patients in end-of-life care.³⁸ Such uses of moral psychology are highly significant because bioethical judgements are always mixed judgements that are based on both normative and empirical presuppositions.³⁹ To verify the truth of the empirical presuppositions, empirical moral psychology provides bioethicists with a powerful extension of their means for accurately examining the descriptive facts of a bioethical case. Several finer-grained distinctions within the category of actual-state analysis are possible.⁴⁰ What unites them is the recognition that moral psychology can significantly inform how to orient one's normative framework to a given bioethical case, which underwrites the point that moral psychology is normatively significant for bioethics.

4.2. Genealogical analysis

The use of moral psychology in what I have dubbed 'actual-state analysis' may be familiar territory. But there is more. Bioethics can also use moral psychology to focus on backwards-looking components and, in particular, on facts about the ultimate or proximate genealogy of our moral judgements. I will refer to this as 'genealogical analysis' because bioethicists can use moral psychology to understand where their own moral judgements and moral dispositions, or those of other people involved in the decision situation, come from. For example, some studies make hidden psychological influences available for normative inquiry.⁴¹

In an illustrative example, Żuradzki (2019), discusses the so-called identifiable victim effect, which is the psychological finding that people are more eager to help identified individuals than unidentified ones.⁴² For example, people seem more willing to donate money to help an identified patient than to donate money to a hospital. So whether a victim is identifiable or not often makes a difference regarding people's moral judgements (or so it seems). But is it legitimate to base one's moral judgements on this factor? Several philosophers have argued that the identifiability of a patient is normatively insignificant, all else being equal. Hence, deciding for or against an action based on the identifiability of the patient would be illegitimate. Empirical moral psychology can make these hidden influences on moral judgement available for inquiry.

³⁷ van Thiel, van Delden (1997).

³⁸ Duke, Thompson (2007). See also Musschenga (2005); Herrera (2008); Vries, Gordijn (2009).

³⁹ Düwell (2013).

⁴⁰ Cf. Vries, Gordijn (2009); Musschenga (2005); Kon (2009).

⁴¹ Żuradzki (2019, 2015); Brinchmann, Nortvedt (2001).

⁴² Schelling (1968); Jenni, Loewenstein (1997). See Żuradzki (2019) for further references.

Genealogical analysis obviously contributes to a full understanding of the actual state. It is expedient to single it out as a separate category nonetheless, because genealogical analysis comes as a corrective second step after an initial assessment of the actual state has been made. Its focus is to uncover influences on thought and behaviour that seem illegitimate in light of the chosen normative framework and thus need to be removed from consideration.

4.3. Forward-looking analysis

There are also forward-looking components, where bioethicists can use non-moral facts about how to improve practical bioethical interventions. I refer to this as 'forward-looking analysis', because bioethicists can invoke moral psychology to analyse and better understand how to put bioethically legitimate decisions into practice (i.e. how to proceed from the point at which a decision has been taken). The effectiveness and realisability of bioethical decisions depend to a significant degree on moral psychological factors, and bioethicists should make use of insights from moral psychology to seek ways to put into practice what ought to be done.

For example, Antiel, Humeniuk, Tilburt (2014) discuss research about the behavioural effects of moral disagreement and ways to overcome them.⁴³ They show that appealing to the moral foundations by a patient helps to make the patient behave in desired ways. Insofar as we have moral obligations to intervene in specific ways, moral psychology can tell us how to do it best.⁴⁴ So by having a fixed set of moral principles that tell us what we want to achieve by means of a bioethical intervention, moral psychological premises can tell us how we ought to do it.

Lindauer (2019) has recently discussed several additional forward-looking uses of moral psychological findings.⁴⁵ Among those, a particularly interesting suggestion is that the normative concepts used by people can play a practically relevant role. Lindauer writes (2019):

The point is to see which concepts and arguments, that at least some reasonable interlocutors take to be good ones, do the best job of helping us to solve practical problems.

That suggestion meets the practical commitment of bioethics, and it fits into the larger category of using moral psychology for forward-looking analysis in bioethics. That concepts do indeed have practical consequences is shown, for example, in recent work on people's evaluations of social interactions, which are significantly (negatively) influenced by descriptions that invoke concepts associated with online technology (reference redacted for blind review). Bioethical interventions aimed at, for example, getting

⁴³ Antiel, Humeniuk, Tilburt (2014).

⁴⁴ See also Dörries (2009) and Wocial (2010), who have described similar useful interventions based on moral psychological insights in this journal.

⁴⁵ Lindauer (2019).

people to refrain from such interactions, could use such findings to improve their efficacy (given a sound bioethical legitimation for the intervention, of course).⁴⁶

Forward-looking analysis is thus helpful to determine how to best carry out a bioethical decision. Given bioethics' practical commitment, successful implementation is an important aim. The contrast with normative ethics and its primary focus on *what to think* is especially clear here. Even if moral psychology has no effect on what we ought to think about moral matters, it is surely significant for *how* we ought to do what we ought to do and thus normatively significant in the sense defined above.

4.4. Restricted fundamental revision

Thus far, I have described how empirical moral psychology can be normatively significant in the sense of making a difference to what we ought to do while holding fixed some set of moral principles or decision guidelines.⁴⁷

However, moral psychology can also lead us to revise at least some of our moral principles or decision guidelines. In this most profound sense, we can use moral psychology to change our warranted confidence in some parts of our normative framework. I will refer to this as 'restricted fundamental revision'. Moral psychology can lead to *fundamental revision* in the sense that it alters the parts of a normative framework that are used for bioethical decision making. As discussed in section 2, bioethics proceeds from some sort of normative framework or commitments (whether they are rules, principles, or virtues, etc.). Changing some of the parts of such frameworks or commitments (e.g. by warranting reduced confidence in a particular principle) is what I call fundamental revision. Moral psychology can lead to fundamental revision but it will be *restricted* in the sense that it cannot change our warranted confidence in *all* parts of the normative framework. But as long as bioethicists hold at least some parts of the normative framework fixed, they can build arguments that typically lead to reduced confidence in other aspects (beliefs and judgements) of the normative framework that we currently accept.

For example, consider the revision of the strong interpretation of autonomy, according to which patients uniformly prefer to take all decisions themselves, in bioethics.⁴⁸ Several lines of moral psychological inquiry, both quantitative and qualitative, have contributed to the insight that the strong interpretation of autonomy is based on faulty empirical presuppositions.⁴⁹ This analysis is possible because it is based on another aspect of the normative framework that is held fixed, namely that patients' preferences regarding self-legislation should be respected. Based on this 'common ground', a restricted fundamental normative revision based on moral psychology was possible and legitimate.

⁴⁶ Lindauer's aim is that his discussion is understood as a general vindication of empirical moral psychology in normative ethics. Insofar as his project succeeds, it would vindicate the four uses of moral psychology discussed in this section. Nevertheless, I would still maintain that Lindauer's argument fails to vindicate the project of unrestricted fundamental revision in normative ethics. Whether that is significant, of course, is ultimately a question about the proper aims of normative ethics, which is a discussion well beyond the scope of this paper.

⁴⁷ This is the second sense of normative significance discussed in section 1.

⁴⁸ Kon (2009).

⁴⁹ E.g. Duke, Thompson (2007).

In light of this limited revisionary use, empirical moral psychology may help bioethicists to not only 'enrich the database' of normatively-relevant non-moral facts (as described above) but *also* to partially revise their normative framework. Moral psychology can thus change bioethical normative frameworks and therefore also change what people ought to do in bioethical contexts. Therefore, moral psychology has a high level of normative significance for bioethics within the limits of at least some parts of a normative framework.

5. The challenge of unleashing the full potential of moral psychology

Thus far, I have argued that sceptical conclusions about the normative significance of moral psychology should not be projected from moral philosophy to bioethics, and I distinguished four concrete ways in which moral psychology can play a significant role for bioethics.

In this section, I will draw a second lesson from moral philosophy and consider whether *unrestricted fundamental revision* based on moral psychology is possible in bioethics. Recall that fundamental revision means that some parts (e.g. principles or rules) of a normative framework can be changed by moral psychological findings. Asking about *unrestricted* fundamental revision is asking whether moral psychology could change *all* of a given normative framework. Though unrestricted fundamental revision is possible and highly rewarding in moral philosophy, there are significant challenges to making use of this instrument in bioethics.

What is unrestricted fundamental revision? To illustrate and explain the idea, recall the analogy with an internet search algorithm. Even with a wonderfully detailed database, the results of a search engine will be only as good as the search algorithm. For example, although Google Search has a tremendously rich database, problems in the search algorithm can limit its usefulness. For instance, a while ago, Google image searches for 'CEO' only turned up pictures of white men, and general search results produced prestigious job ads for men, but not for women.⁵⁰ If the algorithm is not fixed, enriching the database will not resolve the problem. Likewise, the added understanding provided by moral psychology (in terms of actual-state, forward-looking, genealogical, or restricted fundamental analysis) is only fully useful for bioethics insofar as it possesses an adequate moral framework to begin with. Recall that we need not assume that there is a single best moral framework or that a moral framework necessarily consists of fixed moral principles. It suffices to assume that some moral frameworks can be better than others, and virtually all contemporary bioethical methodologies are based on this assumption.⁵¹

The next section will show how such unrestricted fundamental normative revision is possible, highly attractive, and yet very controversial in metaethics. I will then argue in the section that follows that the controversiality of unrestricted revision raises a methodological challenge for bioethics.

⁵⁰ Kay, Matuszek, Munson (2015).

⁵¹ Cf. Childress (2007).

5.1. Unrestricted fundamental revision in metaethics

Empirical moral psychology may be used for unrestricted fundamental revision in metaethics. That is, its findings can be used to challenge fundamental assumptions about our justification for maintaining some or all of our moral beliefs. In contrast to the *restricted* revision discussed above, *unrestricted* revision does *not* depend on a (set of) moral premises to yield a valid argument.

In this section, I will demonstrate unrestricted fundamental revision in metaethics in some detail to show with some clarity where the epistemic problems for such arguments arise. This will be helpful to see how such arguments raise a challenge for bioethics in the next sub-section.

For example, consider a conventional interpretation of so-called evolutionary debunking arguments in metaethics.⁵² These arguments are supposed to show that our confidence in *all* our moral judgements is undermined by the fact that our moral judgements (ultimately) have an evolutionary explanation. Since moral judgements are adapted to increase fitness, and insofar as fitness is unrelated to moral truth,⁵³ it would be a coincidence if our moral judgements were true. Hence, we ought to give up our moral judgements, or so the argument goes.

This reconstruction of an evolutionary debunking argument is oversimplified in many ways, but the crucial point is preserved. There is a jump from an empirical claim, namely that evolutionary influences could easily have led us to endorse different moral beliefs, to an epistemic claim, namely that we therefore epistemically ought to give them up.⁵⁴ In general, these arguments proceed as follows:

1. A set of descriptive premises that invoke moral psychology.
2. A set of *epistemic* premises.
3. A morally significant conclusion.

This sketching out of these arguments can be turned into a valid argument that avoids the is-ought fallacy because it includes at least one normative premise. In contrast to the sketching out of our earlier argument, however, the normative premise is of the epistemic and not the moral kind. Attempts at unrestricted revision based on moral psychology have invoked evolutionary considerations as well as (social) psychological,⁵⁵ neuroscientific,⁵⁶ and anthropological ones.⁵⁷ The conclusion of these attempts is morally significant because it states that (particular) moral beliefs ought to be given up or that we have reason to change our beliefs about the status of morality.

However, it can be shown that epistemic considerations that could lead us to fundamentally revise our moral outlook are fraught with controversy to the extent that attempting an unrestricted revision 'from moral psychology' requires engaging in an epistemological argument. Two main arguments for unrestricted revision have emerged in the literature.

⁵² Cf. Kahane (2011); Sinclair (2018); Wielenberg (2016); Joyce (2016a); Klenk (2018).

⁵³ To illustrate, consider that providing for unrelated people may be morally right but not fitness-enhancing, cf. Buchanan, Powell (2015).

⁵⁴ Cf. Klenk (2020a) for more details and an overview of the discussion.

⁵⁵ Leiter (2004a).

⁵⁶ Sinnott-Armstrong (2008).

⁵⁷ Brandt (1944).

The first route employs the principle of parsimony: insofar as some moral psychological theory can (best) explain why people hold a moral belief B, one is not justified in assuming the existence of some moral fact as a referent of the belief. Hence, one can conclude that there are no such moral facts.⁵⁸ However, the principle of parsimony is controversial in arguments about what we ought to believe. Suppose that you have good reason to believe in some type of bioethical framework, such as the principle of autonomy. Attempts at unrestricted revision suggest that you ought to change your belief once you discover that your endorsement of the belief is not explained by its truth (or adequacy). But that is a bona fide epistemological claim, and it is far from settled whether we have reason to accept it. Consequently, the major discussion point concerning such arguments is not whether moral psychology provides the best explanation of some moral phenomenon (that is widely accepted, though see Buchanan & Powell, 2015), but whether that fact has any epistemological import. Hence, the first route to an unrestricted fundamental normative revision leads straight into a deep epistemological thicket.

The major alternative employs a premise about the epistemic justification for maintaining and changing moral beliefs.⁵⁹ This route to unrestricted fundamental normative revision requires showing that moral beliefs lack justification, given some moral psychological fact, where the lack of justification does not stem from the explanatory inefficacy of moral facts (as in the previous option). The argument would follow this schema: 'the A-judgements are based on E, and E is epistemically non-warranting, and therefore the A-judgements are not warranted'. In this case, we would have a bona fide argument for unrestricted fundamental revision. However, we would again have bona fide epistemological claims to discuss. Why is an E-based belief not warranted? And, if it is not warranted, why ought it be given up?

Like in the previous parsimony-based argument, the major discussion point of arguments that follow this route does not concern the moral psychological facts, but rather their epistemic significance.⁶⁰ Legitimately accepting an unrestricted fundamental normative revision therefore entails a legitimate epistemic argument.

There are thus significant epistemic and methodological challenges for successful unrestricted fundamental revisions in metaethics. Overcoming these challenges may be extremely rewarding. In contrast to restricted fundamental revisions, unrestricted fundamental revisions might make good on the promise that arguments from moral psychology can settle or improve long-standing philosophical disputes that are entrenched because they are based on differing moral starting assumptions.

5.2. Limits of unrestricted fundamental normative revision in bioethics

There could be a similar attempt at unrestricted fundamental normative revision in bioethics. As discussed above, bioethics relies on some kind of normative framework (which, depending on the details, invokes principles, rules, values, virtues, or basic value orientations in casuistry approaches). Unless one employs a widely implausible (indeed

⁵⁸ See also Harman (1977).

⁵⁹ Cf. Klenk (2019a; 2020b).

⁶⁰ Wielenberg (2016).

incoherent) 'anything goes' approach to bioethical decision making, one will therefore have to accept that there is a sense in which one's chosen normative framework could be improved (even if there is no single best normative framework).⁶¹

From that perspective, bioethicists can sensibly ask the following question: do we have the *right* framework? Are we *justified* in using that framework (as opposed to some other framework)? Recall our analogy with a search engine. We can ask 'Could we have a better search algorithm that processes all that information and spits out an answer?' Analogously, 'Could we have a better framework to process all that information and come to answers to bioethical cases?' If the answer is yes, then there is room to improve (bio)ethical thought and behaviour.

Indeed, it is not only sensible for bioethicists to be concerned with unrestricted fundamental revision, but also obligatory. At least, insofar as bioethicists make the plausible assumption that there can be better and worse bioethical decisions and that their chosen normative framework significantly influences their success in arriving at better bioethical decisions. The fact that there is already significant methodological debate within bioethics – about the adequate or suitable normative framework (in the loose sense defined above) – is evidence that bioethicists (rightly) take that obligation seriously. Moral psychology could play a significant role in making progress in these debates by figuring in an argument for unrestricted fundamental revision.

It is important to emphasise the *unrestricted* nature of the attempted revision. Other bioethicists have already discussed how moral psychology may be used to 'formulate' ethical principles in biomedicine,⁶² which may create the impression that what I have called a normative framework is built from the ground up on moral psychology. On a closer look, however, such attempts actually begin with normative, moral assumptions about moral relevancy and then formulate moral principles that meet those assumptions and *also* fit well with moral psychological insights. The result is a *restricted* revision, however, because it relies on at least some moral premises. Unrestricted revision does without them altogether.

However, the open epistemological questions raised by attempts at unrestricted fundamental revision pose a significant challenge for bioethics. The normative epistemological premise leaves open the matter of why a (set of) moral belief(s) ought to be abandoned. In short, showing that some moral beliefs, B, ought to be abandoned because some process, x, influences them, requires showing that all x-influenced beliefs ought to be given up. But showing 'that all x-influenced beliefs ought to be given up' will require an epistemological argument.

This is a problem for bioethics insofar as it lacks an established (number of) *epistemic* frameworks that could guide the required epistemic decision making in light of attempts at unrestricted fundamental normative revision. Unlike in the case of restricted fundamental normative revision, where bioethicists can assume premises from a given normative framework and then use moral psychology to derive a normatively significant conclusion, bioethicists cannot lean on an uncontroversial set of epistemic premises to

⁶¹ Childress (2007).

⁶² Ebbesen, Pedersen (2007).

derive a normatively significant conclusion from an argument aimed at unrestricted fundamental revision. Of course, the normative assumptions in arguments aimed at restricted fundamental normative revisions will probably be controversial in normative ethics (after all, there is no settled normative ethics in sight), but that does not matter given the internal commitments of bioethics. The problem is that such internal commitments about epistemology are lacking, and that means that bioethics cannot make use of unrestricted fundamental normative revision.

Naturally, bioethicists could engage in the epistemic debate and defend one or the other epistemic solution to make moral psychology work in unrestricted fundamental normative revision. But that seems to conflict with the practical commitment (rather than mere practical orientation) of bioethics as a discipline. According to Frodeman, Briggie (2016), what makes bioethics successful as a field of practical ethics is its disciplinary intertwinement with its field of study.⁶³ Bioethicists not only study and write about bioethical cases, they are actively involved in bioethical decision making and the translation of those decisions into practice. In contrast, engaging in epistemology as an inquiry into what we *ought to believe* is in some sense removed from an interdisciplinary audience and practical concerns. Pursuing unrestricted fundamental normative revision would thus betray the practical commitment of bioethics. Moreover, as others have shown,⁶⁴ it is often unrealistic to hope that developments in one discipline will somehow arrive and take hold in neighbouring disciplines without concrete measures that support such cross-fertilisation. Assessing the normative significance of moral psychology for bioethics thus reveals a lacuna concerning the methodological relations between (moral) epistemology and bioethics.

There are two options in light of this lacuna. First, bioethicists could simply avoid such arguments. But there is a sense in which this would imply a moral failing. After all, once we assume (plausibly) that there are better and worse bioethical decisions and that one's chosen normative framework significantly determines the outcome, we are committed to searching for the best available normative framework. Missing an opportunity to invoke moral psychology in this task would be a failing. Importantly, even a very general conclusion about the nature of our normative frameworks in bioethics that is drawn from moral psychology would require facing the epistemic challenge outlined above. For example, some may suggest that moral psychological research may have implications on a more general level since it invites us to view morality in pragmatic terms, presumably because moral psychology teaches us about the fragility of moral judgements. But that route is not available for bioethicists without engaging the questions raised by using moral psychology in unrestricted fundamental normative revision. Adopting, for example, a pragmatic perspective on ethics is to adopt a metaethical theory. But to adopt that theory on legitimate grounds, one needs good reasons to do so, and those arguments leave us with open questions about whether we have such reasons or not. The matter can, of course, be settled by stipulation, choice, or vote – but it would be doubtful that such procedures would be legitimate, and the legitimate choice of our

⁶³ Frodeman, Briggie (2016).

⁶⁴ Frodeman, Klein, Mitcham et al. (2010).

moral principles is what bioethicists strive for. Therefore, avoiding or ruling out from the start the use of moral psychology for unrestricted fundamental normative revision is not a good option.⁶⁵

Instead, the implications of the foregoing arguments are that bioethicists need come up with a canon of basic epistemic principles for bioethics. That is the challenge that arguments for unrestricted fundamental normative revision based on empirical moral psychology confront us with. The point can be illustrated by going back to the comparison between moral psychology's use in normative ethics and its use in bioethics. Moral psychology works for bioethics, but probably not for normative ethics, because bioethics can legitimately presuppose some normative framework in light of its disciplinary aims. Within that framework, moral psychology can have normatively significant implications. But aiming for unrestricted fundamental normative revision requires normative frameworks, too, only epistemic ones rather than moral ones. An epistemic framework would allow bioethicists to evaluate moral psychology's significance for changing or revoking their moral assumptions and thus for changing their moral framework. The methodological challenge for bioethics is to evaluate how developing such a framework can be squared with its practical commitment. Given the aforementioned defence of the importance of adequate moral frameworks, however, an inquiry into the possibility of bioethics establishing an epistemic framework is well worth having, though, unfortunately, it is well beyond the scope of this paper. The upshot of the discussion in this section is that the potential normative significance of moral psychology (for unrestricted fundamental normative revision) causes a challenge for bioethics: which epistemic framework can inform the use of moral psychology in bioethics? Given the importance of adequate moral frameworks in bioethical decision making and the potential to change or improve those frameworks through radical revision, it is a challenge to be taken seriously.

Moral philosophical engagement with moral psychology thus offers two quite distinct lessons for bioethics. Within the scope of a normative framework, moral psychology is normatively significant in bioethics even if it is not in in moral philosophy. Without an epistemic framework to lean on, however, moral psychology does not legitimately reach its most radical normative potential for bioethicists.

6. Conclusion

I have outlined a theory about the normative significance of moral psychology in bioethics by analysing two lessons from moral philosophy. First, though moral psychology may be normatively insignificant if viewed in light of the aims of normative ethics, that conclusion does not extend to bioethics. Moral psychology significantly supports actual-state, genealogical, and forward-looking analysis as well as restricted normative revision in bioethics. Second, though moral psychology may be used for unrestricted normative revision in metaethics (to wit, it may prompt change in entire moral frameworks without presupposing moral claims), bioethics must first develop or adopt a suitable epistemic framework to make this use of the moral psychology that is available.

⁶⁵ Thanks to an anonymous referee for raising this objection.

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