This is the accepted version. The final version can be found at:
https://onlinelibrary.wiley.com/doi/10.1111/japp.12577

Title: Motivated Reasoning and Research Ethics Guidelines

Author: Laura Specker Sullivan, Ph.D.
Affiliation: Department of Philosophy, Fordham University
Email: lspeckersullivan@fordham.edu

Abstract: The creation of guidelines has long been a popular means of conveying normative requirements in scientific and medical research. The recent case of He Jiankui, whose research flouted both widely accepted ethical standards and a set of field-specific guidelines he co-authored, raises the question of whether guidelines are an effective means of preventing misconduct. This paper advances the theory that guidelines can facilitate moral rationalization, a form of motivated reasoning. Moral rationalization in research occurs when individuals justify their actions with plausible reasons that cohere with their moral standards. This allows them to act as they want while believing in their own goodness. If guidelines facilitate moral rationalization, this has implications for research ethics training and for the work of applied ethicists. Research ethics training ought to incorporate reflection on conative features of reasoning, including incentives to commit misconduct, and applied ethicists ought to be circumspect about their use of ethics guidelines. Otherwise, they are feeding the fire of rationalization with the cognitive material practitioners need to accomplish their desired ends.

Keywords: Applied Ethics, Rationalization, Research Misconduct

Acknowledgements: This paper has improved greatly thanks to feedback from the 2018 Center for Ethics & Policy Workshop on Philosophical Issues in Research Ethics at Carnegie Mellon University, the 2019 Rocky Mountain Ethics Congress, Peter Reiner and the Neuroethics Collective, members of the 2019 Pre-Tenure Workshop for Women in Philosophy, and two anonymous referees.

Motivated Reasoning and Research Ethics Guidelines

I. Introduction

In late 2018, He Jiankui[1] became the focus of worldwide attention for a biomedical experiment in which he used the gene editing technology CRISPR to modify the DNA of two embryos that were then successfully implanted and born as healthy baby girls. The goal was to disable the gene CCR5, which encodes the protein through which HIV enters cells. The experiment was condemned worldwide for exposing the two girls to unnecessary harm, given that alternative, established, safe, and effective strategies exist to prevent HIV and that the downstream effects of edits to CCR5 are not known.

Ethical analyses of the He Jiankui case have generally focused on the imbalance of benefit and harm to the human subjects of the experiment, given that HIV is a treatable condition and the effects of embryonic genetic manipulation are unknown. Less attention has been paid to the fact that the day after the experiment was announced, He and colleagues published an article in *The CRISPR Journal* outlining a set of five core ethical principles for this type of research.[2] The fact that He acted problematically is uncontroversial; what is of interest is that He's research did not just violate generally agreed upon standards for ethical research – he even violated ethical standards he authored himself.[3] Two of the five core principles ("only for serious disease" and "respect a child's autonomy") refer directly to the balance of benefit and harm for the research subjects, the exact issue for which He's research was condemned.

It may seem inexplicable that a researcher could act unethically in this way, violating their own ethical standards along with those of their field. Yet there are a variety of moral psychological concepts through which He's action might be understood: self-deception, if he believed that his actions accorded with his standards; willful ignorance, if he blinded himself to the aspects of his behavior that violated his standards; rationalization, if he used plausible alternative reasons to sanction his behavior without accounting for his actual motivating reasons; and outright deception, if he knew his actions violated his standards, but perhaps thought that publishing ethical guidelines would serve as a smokescreen, hiding his problematic behavior.

Each of these concepts is a form of motivated reasoning, in which conative mental states (desires, emotions, hopes etc.) influence an agent's cognitive reasoning process.[4] While they share this motivational feature, each concept paints a different picture of He's understanding of the relationship between the standards proscribing his actions and his actions themselves. From the lens of moral psychology, He can serve as an exemplar through which to better understand the variety of moral psychological processes leading to unethical behavior in scientific and medical research.

He's co-authorship of ethical standards for research adds an additional dimension to this picture. The relationship between ethical guidelines and ethical behavior, both within science and medicine and more generally, is a central issue for ethical theory and applied ethics. Recently, there has been a growth of interest in the psychological causes of unethical research behavior, with increased attention paid to the relationship between knowledge of research ethics guidelines or rules and violation of those rules.

For instance, empirical work on research misconduct[5] has found that a large proportion of cases occur when researchers know the ethics rules but deprioritize them in favor of competing interests.[6] De-prioritization of ethical rule-following may be an

individual personality trait, but it can also be attributed to a scientific culture that incentivizes results over fidelity to procedural standards. In the context of this kind of incentive structure, psychological studies of a phenomenon called moral credentialing suggest that knowing the research ethics rules, or feeling that one is an ethical researcher, can paradoxically impede ethical behavior.

Despite the growing empirical evidence for the effects of these complex psychological phenomena in research, forms of motivated reasoning and their relationship with research misconduct have been insufficiently explored by applied ethicists who specialize in science and medicine. This is surprising given that many applied ethicists work alongside researchers and practitioners, and ostensibly aim to facilitate ethical research conduct. Yet the primary means of influence are the production of ethics guidelines. Research on motivated reasoning encourages ethicists to consider what role these guidelines play in forestalling misconduct by raising questions about how researchers' motives influence their utilization of guidelines.

In this paper, I use the case of He Jiankui as a starting point from which to analyze the relationship between ethics standards in science and medicine, motivated reasoning, and unethical behavior, thus beginning to fill this gap in applied ethics research. He Jiankui is an extreme and unusual case – one in which the researcher who acted unethically *was also* an author of a set of ethics guidelines. Yet his case facilitates inquiry into the relationship between guidelines and behavior in more typical cases, where the ethicists creating guidelines are separate from the researchers whose behavior the guidelines are meant to govern. This is because He's authorship of ethics guidelines permits the assumption that he knew and believed the guidelines, making his misconduct all the more surprising.

Through this analysis, I propose that while public responses to research misconduct often presume ill intent, the psychological story is more complicated. Distinguishing between forms of motivated reasoning, including self-deception, willful ignorance, rationalization, and overt deception, highlights the insufficiency of ethics guidelines for guaranteeing ethical behavior, and it draws attention to the complex motivational processes underlying bad behavior. From the lens of motivated reasoning, He's case supports the thesis that ethical guidelines can *sometimes*, *paradoxically* contribute to misconduct. If this thesis is true, it affects the work of applied ethicists, whose development of ethics guidelines, while well-meaning, might not only be insufficient; ethics guidelines might paradoxically license the actions they intend to prevent.

II. Forms of Motivated Reasoning: Self-Deception, Willful Ignorance, Rationalization, and Overt Deception

Motivated reasoning can take a variety of forms. In this section, I explain the four types of motivated reasoning through which He's misconduct might be understood: self-deception, willful ignorance, rationalization, and overt deception. While they are all psychological phenomena that can occur in medical and scientific research, I suggest that rationalization offers the most nuanced and the most likely explanation of He's behavior.

A. Self-Deception

Self-deception and willful ignorance are both epistemological phenomena – they involve agents' capacities to know, understand, and believe facts about themselves and the world. Both concepts describe cases in which agents disavow or disregard evidence for a belief that they do not want to hold or do not want to admit that they already do hold. In epistemology, such reasoners are described as "motivationally biased doxastic deliberators."[7] These are individuals who are deliberating about what to believe is true, yet who have clear biases in one direction or another, perhaps because they want to believe certain fictions about themselves, such that a particular decision is based on an altruistic intention and not a self-serving one.

Self-deception occurs when an agent encounters evidence that a proposition is true, but the agent's desire that the proposition be false leads them to unevenly evaluate the evidence so as to arrive at their desired belief. While self-deceivers have all the evidence for the belief they do not want to hold, their reasoning process allows them to avoid believing it.

Self-deception is often thought to involve beliefs about oneself: faced with evidence about some problematic aspect of one's self (such as selfishness, prejudice, and so on), the desire to retain a positive self-concept may lead one to endorse the belief that one is in fact a good person, despite evidence to the contrary.[8] Such individuals either disregard evidence for a negative belief about themselves and/or dismiss absence of evidence for a positive belief about themselves. Self-deception to maintain a positive self-image is entwined with moral standards, since the positive self-image one desires to retain is often that one is a good person. Accordingly, self-deception is thought to be implicated in, or even a version of, moral rationalization, as I address below. Yet it is important to recognize that self-deception need not involve moral standards. Self-deceivers can engage in motivationally biased doxastic deliberation about all forms of belief: political, environmental, economic, and so on.

B. Willful Ignorance

While self-deception describes a biased process of doxastic deliberation in the face of unwelcome evidence, willful ignorance describes agents who prevent themselves from gaining unwelcome evidence in the first place, and so it is a form of motivated reasoning that occurs even earlier in the doxastic chain. Willful ignorance involves the intentional avoidance or ignorance of facts that conflict with one's desires, perhaps because they are uncomfortable or painful to face.

Kevin Lynch uses the example of a high-ranking Nazi official's refusal to visit a concentration camp as a paradigm of willful ignorance, specifying that the official's suspicion of the purpose of the concentration camps led him to reject any invitations to the camps.[9] Willful ignorance is a form of deliberate blindness wherein one ignores evidence for what one would rather not know, or prevents themselves from acquiring that evidence. Agents who are not responsible for misconduct but who are in a position where it would be easy for them to gain knowledge of it, and where it is likely that they have intimations of it, are candidates for willful ignorance.

In the case of He Jiankui, willful ignorance and self-deception could refer to He's epistemological and doxastic agency, respectively – what he knew about his research practices and what he believed was true about them. According to these two concepts, He either intentionally ignored the aspects of his research that contradicted his guidelines, or

he attended to these aspects but misinterpreted them as unproblematic. On both accounts, the source of the contradiction is either a flaw of perception or a flaw of interpretation: He positioned himself such that he did not see certain facts (willful ignorance) or did not accurately interpret the significance of the facts that he did see (self-deception).

Willful ignorance is the least likely candidate for explaining He's misconduct. He himself, as the person responsible for the misconduct, cannot be said to have been willfully ignorant of his own actions. He also cannot be said to have been willfully ignorant of the ethics guidelines, which he published (and which we can assume he drafted, since he was first author). By contrast, He's collaborators in the United States who claimed not to have knowledge of He's research plans might be said to be in a state of willful ignorance about them, if they sensed that He might be violating research ethics standards but did not inquire about this dimension of his work.

Whether or not He's behavior can be described as self-deception is somewhat more complicated. He certainly had evidence that his actions were wrong, since he wrote ethics guidelines according to which his research was problematic. Through his violation of his own ethics guidelines, he could be described as facilitating his misconduct by a process of self-deception that allowed him to focus on the evidence that his actions were morally commendable, while disregarding the evidence of wrongdoing.

A close reading of He's guidelines seems to reinforce this interpretation: in addition to the two core principles cited above, the five principles include "mercy for families in need," "genes do not define you," and "everyone deserves freedom from genetic disease," which emphasize the need for researchers to help people by reducing the burden of diseases. On some accounts, He was preoccupied with reducing the stigma of HIV, a motivation that at least two of his principles would have endorsed.[10] If he focused on these principles while disregarding the others, he qualifies as a motivationally biased doxastic deliberator who engaged in self-deception.

Yet He's use of his ethics principles was not just for doxastic deliberation. Arguably, he also used them post-hoc to justify his research practices, and he may have used them while reasoning about whether to pursue this research project in the first place. For this reason, it seems that an account of motivated reasoning beyond doxastic deliberation is needed. As I explain below, rationalization offers a more complete picture of He's reasoning process.

C. Rationalization

While He Jiankui's misconduct is not easily explained by the concept of willful ignorance, self-deception is a likely component of his misconduct. Rationalization offers another potential account. Self-deception and willful ignorance are largely epistemological phenomena that describe motivated deliberation about what to believe; rationalization is a broader phenomenon that can encompass motivated judgment about belief or action.

Recent philosophical work on rationalization resembles self-deception, and Robert Audi even describes self-deception as a kind of rationalization. I endeavor to keep them separate, while acknowledging a strong resemblance between the two concepts. Because these two phenomena are so closely intertwined, it may be helpful to think of them as two processes that often operate in tandem. Audi clearly takes this view,

discussing different forms of "rationalizational kinds of self-deceptive practical reasoning."[11]

Colloquially, to say that someone is rationalizing seems to mean that they are using insufficient reasons to justify a belief, attitude, or action in which they have an interest. Philosophical work on an account of rationalization that can capture this colloquial understanding begins in earnest with Robert Audi's foundational 1985 paper, with a spate of philosophical work on this topic in the past decade. Jason D'Cruz writes that rationalization tactics "inculcate the appearance of sound reasoning while still affording the desired flexibility in the outcome of deliberation."[12] Eric Schwitzgebel and Jonathan Ellis describe rationalization as "when a person favors a particular conclusion as a result of some factor (such as self-interest) that is of little justificatory epistemic relevance, if that factor then biases the person's subsequent search for, and assessment of, potential justifications for the conclusion."[13] Jesse Summers conceives of rationalization as offering a sincere explanation of one's action that is not the best explanation, but is the one the agent is motivated to have.[14] Joshua May describes rationalization "in the pejorative sense" as "attempting to justify what's not in fact justifiable," while acknowledging that rationalization has a non-pejorative sense, in terms of simply giving a reason for an action.[15]

These recent accounts characterize rationalization as a process explaining or justifying some end (an action, belief, etc.) that an agent has an interest in reaching (e.g., a bias, a desire), such that the interest distorts the accuracy of the explanation or the justification. As Jesse Summers notes, "I come up with a very good justification for an action, but I looked for the justification only because I had some underlying motivation."[16]

Schwitzgebel and Ellis, along with Summers, explicitly state that rationalization is post-hoc.[17] D'Cruz writes that rationalization is post-hoc, but some of his examples suggest this is not a strict characterization.[18] If it is a post-hoc phenomenon, then rationalization is an incomplete or inaccurate account of one's reasoning process that makes one feel better about oneself after the fact. Audi seems to suggest that rationalization need not be post-hoc but could occur during deliberation, when an agent is weighing and balancing reasons to act. May explicitly conceives of a form of "ante hoc rationalization," in which rationalization plays a motivational role in action.[19] Audi and May's *ante hoc* accounts are examples of rationalization as motivated reasoning, where the rationalization process directly affects behavior.

In Audi's account, rationalization involves exhibiting or representing an action as rational when in fact it is not, and this is roughly in line with the other accounts described here.[20] A key aspect of rationalization, for Audi, is that one may utilize reasons for an action that explain the action-type, but not the action-token. In other words, one may acknowledge plausible reasons for an action, but they may not be the *actual motivating reasons*.[21] Thus the reasons offered are rational, even if the reasoning process relies more heavily on an alternative, less desirable set of reasons.

Rationalization is irrational in that it presents an incomplete and thus inaccurate picture of one's reasons for acting. In so doing, an agent presents the reasons that they want to have, but not the reasons that they in fact do have. Part of what makes rationalization so tricky is that the reasons given *do* explain or justify the belief, attitude, or action, at least superficially – as D'Cruz suggests, they are plausible. It is just that they

are not an accurate or comprehensive explanation or justification. As May writes, "the action remains rationalized from that person's deluded perspective, but it's then rationalized in the pejorative sense: one's rationalizing explanation is a poor one."[22]

This philosophical account of rationalization as a form of motivated reasoning roughly coheres with contemporary psychological accounts of *moral* rationalization. While most philosophical accounts describe rationalization *simpliciter* as a generic form of motivated reasoning, these psychological accounts specify the form of rationalization that occurs in the context of moral standards and the desire to believe that one is a good person.

Jo-Ann Tsang defines moral rationalization as "the cognitive process that individuals use to convince themselves that their behavior does not violate their moral standards."[23] In a meta-analysis of psychological work on this topic, she describes moral rationalization as necessitated by a conflict between the moral standards with which one is raised and one's motivations to do something that one knows is wrong. Moral rationalization presents as a form of motivated reasoning in which one knows the result they would like to reach (that their actions are moral, and thus sanctioned), and they focus on the reasons that align with this goal, without acknowledging their other, conflicting reasons.

May is one of the few philosophers to address moral rationalization directly; he includes motivated moral reasoning, moral licensing, and moral hypocrisy in this category.[24] These three phenomena share the central feature of moral rationalization in the psychological literature as a motivated reasoning process that permits the agent to act according to self-interest while believing in their goodness.[25] Moral rationalization thus tends to involve a conflict between acting in self-interest and acting from altruism; a moral rationalizer has the ability to convince themselves (and often others) that a self-interested action is an altruistic one. Yet the unwanted reason need not be a self-interested desire: it can be another conative state, such as a feeling of disgust or sexual arousal.

Due to its ability to encompass immoral action in addition to inaccurate beliefs, rationalization – and moral rationalization specifically - offers a better account of He's misconduct than self-deception or willful ignorance. Rationalization allows that He knew the ethical standards put forth for his research and that he believed they were true, as suggested by the fact that he published them. Yet in deciding whether to proceed with his research program, He focused on the reasons that rationalized his action as altruistic: that his work would decrease HIV stigma and burden in China, which allowed him to see himself as moral while acting unethically, disregarding any self-interested reasons or other conative features of reasoning he may have had, such as the desire for praise, fame, and material reward.

D. Overt Deception

Thus far, I have assumed that He was a flawed doxastic or irrational agent, but not a flawed moral agent. Of course, this latter interpretation is possible. He might have known perfectly well that his research violated his guidelines and international research ethics standards. But while he knew his own guidelines, he may not have believed them, despite publishing them. Even if he believed them, he may not have cared that he violated them. He may have thought that there were more compelling considerations – funding

opportunities or perhaps pressure from the Chinese government to produce certain results – that outweighed the harm of the misconduct. He may have thought that if no one found out about the misconduct, the payoff would be worth the risk. On this account, He is not a flawed doxastic or irrational agent but an immoral agent who used instrumental reasoning to make a self-interested judgment. He failed to consider adequately the interests of the other people involved, such as the couples pursuing IVF and the infants that resulted.

This interpretation assumes that He engaged in an instrumental calculation that led to overt deception. He knew that he stood to benefit from the success of his research and he recognized that he weighed his own interest more heavily than the potential harm to others. Yet the few accounts of He's personality do not paint a picture of him as a self-interested researcher.[26] He was ambitious, but like many people working in clinical research he also saw himself as helping others to live better lives. One of He's primary motives was concern for the stigma and discrimination couples with HIV face in having children, a concern that is clearly apparent in his ethics guidelines. This permits the assumption that He sincerely believed that gene-editing to decrease the chances that the children resulting from IVF would become infected with HIV was the right thing to do.[27]

Assuming that this account of He's motives is accurate, then the interpretation of He as an overt deceiver is incorrect. This is also intuitively more plausible; few cases of wrongdoing can be traced to an agent's intention to cause harm.[28] This makes it more likely that He was not an immoral agent, even though his motivated reasoning was irrational. He meant to help people, despite harming them. Rationalization seems to be the best concept to account for this case: it explains how He's desires to be a moral agent who helps people and to do so through a career-making genetic modulation study eclipsed his ability to recognize and accurately weigh his reasons for and against continuing his research. And, as I will argue, his ethics guidelines bolstered this rationalization process, rather than providing a needed moral reality check.

In the following section, I explain why rationalization might be a broader phenomenon in research ethics, beyond extreme cases like that of He Jiankui. I then offer support from psychological research on moral credentialing for my interpretation of He's case, and I explain how applied ethicists' work in research ethics – including ethics guidelines – can inexplicably support the rationalization of misconduct.

III. Rationalization in Research Ethics

In reflecting on the rationalization of unethical research practices such as Unit 731 in Japan during World War II, William LaFleur observed that, "Rationalizations work with maximum effect precisely when 'safeguards' have been put in place and have come to be regarded as effective obstacles to carrying out ethically flawed plans and programs. The circumvention of bulwarks constitutes the *raison d'etre* and the special genius of the rationalization" (LaFleur 2007, 234).

LaFleur seems to suggest that rationalization does not just occur *in spite of* guidelines but that guidelines can *facilitate* rationalization, perhaps by giving a false sense of security in preventing misconduct. Yet as LaFleur recognizes, there is a gap between ethical safeguards such as research guidelines and individual behavior, especially when such behavior is driven by motivated reasoning.

This idea – that guidelines are insufficient to guarantee ethical action – is not new. In his seminal 1966 article, Henry Beecher encourages the implementation of informed

consent requirements for clinical research with human subjects *but also* suggests that such requirements are insufficient for ethical research practices without "an intelligent, informed, conscientious, compassionate, responsible investigator." This is because, given myriad compelling reasons for scientific research, there can be an "unfortunate separation between the interests of science and the interests of the patient."[29] Beecher's focus on the gap between the interests of science and the interests of the patient emerges from his recognition that researchers are liable to experience dissonance between their reasons for advancing science and their reasons for not harming others. When researchers rationalize unethical research practices as benefiting patients, as in the case of He Jiankui, it can become almost impossible to perceive this gap.

As Beecher recognized, guidelines and other forms of moral requirements are unguaranteed means to ethical research practices; a researcher's character is a much more reliable source.[30] This is especially the case given the pressure on researchers to publish, win grants, and gain tenure. While ethics guidelines cannot help researchers to sort through these competing and often highly personal interests, the development of virtuous character traits can aid in this process of moral reasoning, as I discuss in more detail in the conclusion.

LaFleur and Beecher are not alone in the concern that the incentive structure of scientific advancement might facilitate misconduct, even in the face of ethics guidelines. Increasingly, there is interest in not just developing ethical guidelines, but in determining how to ensure that researchers follow them.[31] When they do not abide by guidelines, there is an effort to identify the reasons for their misconduct. A recent study found that, of researchers who were guilty of research misconduct, 72% of these cases occurred due to lack of attention to details because the researchers were overextended, 56% occurred because the researchers were unsure of the rules, and 56% were because the researchers did not prioritize ethics compliance (all other responses were fewer than 50%).[32] The second category, those who were unsure of the rules, are the only group for whom further education on ethics guidelines would resolve their misconduct. The first group, the most common, raise another issue – whether the current research environment facilitates or impedes the responsible conduct of research – an issue I return to later.

The last group is of primary interest here. The fact that they did not "prioritize compliance" can be interpreted in two ways, and it is likely that there are some researchers who fit each interpretation. On the one hand, these researchers may have thought that ethics is not all that important, and deprioritized rule-following due to this value judgment. On the other hand, some of these researchers may have thought that while ethics is important, it is not *as* important as the speed or efficiency with which one completes a study, and so their de-prioritization of rule-following was comparative. While the former set of researchers just do not take ethics seriously, the latter set take it seriously but not seriously *enough*, in the face of competing considerations.

The comparative de-prioritization of ethics compliance can also take a number of forms. De-prioritization may be a simple and conscious cost-benefit calculation, in which the researcher assesses the risk of not following the ethics rules and compares it to the risk of not completing their study quickly and efficiently, and, judging the latter risk as more costly, decides to cut a few ethical corners to finish their study. The fact that the most common reason for research misconduct was overextension supports this interpretation of "deprioritizing compliance" – when time is tight and researchers have

too much to do, something must be cut. In this form of comparative de-prioritization, researchers are intentionally flouting the ethics rules, perhaps because they believe the risk of being caught is lower than the risk of not bringing one's research to publication quickly.

Yet another form of de-prioritization aligns with rationalization. When researchers are overextended, they might feel that they have no choice but to deprioritize some dimension of their work. They may think that misconduct is not problematic because "everyone else is doing it" or because "this is what it takes to be a successful scientist." While these are plausible reasons for misconduct, they are not good reasons, and they mask at least one of the underlying motives: to be a successful scientist oneself, with all the rewards accompanying that position. If they can rationalize their misconduct as something that is not unethical, because it is implicitly accepted by the profession, then they can maintain their sense of themselves as an ethical researcher *and* a successful researcher. Rationalization will be even easier if ethics guidelines exist that are ambiguous enough for researchers to use them as plausible reasons for action. In this case, the rationalization is not "everyone else is doing it," but "this is the right thing to do."

Rationalized misconduct is thus one outcome of the incentive structure of science, in which the character trait of productivity is rewarded more than conscientiousness – a concern that was central to Beecher's analysis. Researchers are not ignorant of this incentive structure. A recent study of researchers' beliefs about the source of research misconduct found that structural sources were thought to be the most common, including pressure to succeed or show results and fear of loss. The authors explain, "Most interviewees also noted that misconduct can occur even if scientists generally want to act ethically, because of social or institutional pressures that make them feel that they have limited options. Perhaps paradoxically, research misconduct can sometimes be explained by a desire to protect careers, livelihoods, and personal relationships."[33] As the authors note, researchers are not wrong in this belief: pressure to publish and competitive research environments are correlated with increased misconduct.

While some cases of misconduct can be traced to not knowing the rules, many cases are rooted in the competitive culture of scientific and medical research. Further, pressure to succeed can lead researchers to consciously and intentionally choose to deprioritize compliance, or it can facilitate rationalization of misconduct that allows researchers to feel that they are both ethical *and* productive. One thing is clear: research misconduct is not just a matter of researchers not knowing the rules, although that surely explains *some* cases. Rather, it is a matter of the incentives and motivations researchers experience, the competition of which does not always reach the level of conscious awareness.

The authors of the above study observe that "Structural causes like pressure and personal relationships are not failures to know or understand what would have been proper conduct."[34] This suggests that research training based in knowledge of ethical guidelines will not ameliorate cases of misconduct rooted in structural causes. But can it exacerbate them? In the next section, I explain how reinforcement of research ethics guidelines might paradoxically, in some cases, increase the odds of research misconduct.

IV. Ethics Guidelines and Moral Credentialing

Theoretically, ethics guidelines facilitate moral conduct by providing researchers with clear-cut rules to follow. Knowing the ethics rules, and believing in them, gives researchers a reason to act according to them – ideally because that is what they ought to do, but also perhaps because of the career benefits of ethics rule-following and the risks of breaking rules. Following the ethics rules can also give someone the sense that they are a good person, and for those who have internalized moral standards, this self-image is important. Yet the phenomenon of moral credentialing suggests that this self-image can also have a licensing effect – essentially a form of motivated reasoning – that facilitates immoral action.

In a number of studies, people who engaged in moral credentialing by disagreeing with problematic statements or carrying out morally commendable acts were subsequently more likely to act in a way that conflicted with how they had established themselves earlier.[35] In one study, individuals who credentialed themselves as unprejudiced were then more likely to make a prejudiced decision,[36] while in another study individuals who credentialed themselves as altruistic were then more likely to make a self-indulgent decision.[37] In a more recent study, individuals who morally credentialed themselves by responding well to a somewhat unlikely morally charged situation were then more likely to cheat in a situation in which it was relatively simple to rationalize the cheating.[38] Importantly, moral credentialing appears only to have an effect when the situation is somewhat ambiguous such that the decision is easily rationalized (i.e., the immoral action is not pushing another person in front of a train), which arguably captures many cases of misconduct.

One possible explanation of moral credentialing is that, when individuals have a sense of themselves as good people, it is this positive self-belief that in effect shields them from acknowledging that their action could be problematic. Most studies have rejected the hypothesis that credentialing simply puts people in a good mood.[39] Psychologists propose that the effects of moral credentialing have more to do with subjects' need to retain a positive self-image than they have to do with managing what other people think about them.[40] This feeds into rationalization because moral credentialing essentially functions as a filter, preventing people from acknowledging morally problematic motives and making it possible for them to engage in misbehavior without seeing it as such.

Moral credentialing is an intriguing species of rationalization relevant to the work of applied ethicists. Moral credentialing occurs when an individual wants to act in a way they ought to recognize as morally problematic – e.g., to cheat – while also wanting to see themselves as virtuous. In other words, they want to be seen as smart, but they also want to be seen as good. When they have just morally credentialled themselves as good, such as by resolving a moral dilemma or answering a question about moral theory, they are then more likely to assume that their desire to act must be in line with the self-concept that they have just established. In situations where a rationalization – an explanation or justification of their action as unproblematic – is readily available, this allows them to act as they want while retaining their belief in their own goodness. Moral credentialing is thus a license that allows one to do what one wants to do while retaining one's positive self-concept.

Were the credentialing activities themselves good evidence of one's virtue, then moral credentialing might not be a problem – most evidence for it is from situations in

which morally, little is at stake. Furthermore, in morally ambiguous situations, if one has evidence that one is likely to act virtuously from a prior credentialing activity, it is not irrational to assume that one's motivations generally guide one in a good direction. The problem is with the nature of credentialing itself. In Brown et al. (2011), the dilemmas used for credentialing are simultaneously unrealistic and are ones in which people are most likely to assume that they will act morally, such as when people assume that they would have been immune to the bystander effect in the Kitty Genovese case. The evidence for virtue is thus not good evidence, but it still effectively credentials individuals and leads to a rationalization of a problematic action.

He Jiankui's guidelines could have precipitated a similar psychological effect. He knew enough about the ethics of medical research to write a publishable set of ethics guidelines that serve as valid reasons to conduct his research. One of the remarkable things about He's retracted ethics guidelines is that it is easy to see how plausible they are as reasons for actions – they highlight the importance of developing cures for genetic diseases without ever mentioning the dangers of genetic manipulation of human embryos. They present as an external picture of He's moral rationalization process, in essence saying, "genetic manipulation can't be wrong because of all these ways it helps people."

Writing these guidelines served as He's credentialing activity, making him feel that he possessed the ethical expertise necessary to act appropriately in his field. He thought that he could follow his inclinations and perform the kind of research he wanted to conduct. Credentialing seems to allow agents to see themselves as the exception to the rule, even when they are the ones who have written the rules.

Moral credentialing is a form of moral rationalization in which individuals who are given easy means with which to establish their moral credentials are subsequently more likely to rationalize misbehavior, at least when it is contextually ambiguous or when alternative, virtuous reasons are readily available to explain the action. This psychological account of moral rationalization fits with the philosophical account of rationalization. When agents rationalize following moral credentialing, they can act on their motivation to misbehave while also retaining their desired positive self-concept. The problem is not the desire to act problematically itself – it is the way in which recognition of the problematic desire is effectively prevented by the readily available reasons with which one can explain the action. Moral rationalizers desire to act in certain ways, and they use rationalization to justify their action with plausible reasons so as to retain their desired belief that they are a good person. If they already have a sense of themselves as a good person through moral credentialing, then this essentially makes it even harder for them to acknowledge desires and motives that conflict with their moral self-image.

Psychological work on moral credentialing builds on previous work which suggests that the belief that something is the right thing to do will not result in action without sufficient situational factors, such as organizational support for moral behavior, encouragement from one's peers, an emphasis on individual responsibility, and so on.[41] Indeed, part of what makes moral credentialing such a challenging psychological phenomenon is that it shows that, even when individuals clearly know how to distinguish misbehavior from moral action, they are not always capable of translating that knowledge into action. Situational factors, such as the incentive structure of scientific and medical research, play a significant role in motivating researchers to follow ethics rules or not.

When licensed by moral credentialing, the odds that moral rationalization will occur are higher if agents understand moral deliberation as a purely cognitive process – as identifying and evaluating moral beliefs in relation to a given case. This is arguably how many applied ethicists engage with researchers: by issuing guidelines and ensuring that researchers know and believe that following them is the right thing to do. Yet agents with this understanding of moral reasoning will not be able to account for the effects of incentives in their process of moral deliberation because they will not think that such desires affect or ought to affect their reasoning. This is not so much an instance of what D'Cruz calls "performative pretense" – pretending to deliberate about what to believe even though one's conclusion is predetermined by one's desires - as it is an example of the sincere rationalization conceived of by Jesse Summers.[42] Agents who morally rationalize sincerely believe that the moral reasons they acknowledge are the reasons for which they act. Yet by not acknowledging the incentives that motivate their actions, they facilitate rationalization by misunderstanding their own drivers for action.

In the next section, I suggest that this raises problems for how applied ethicists generally go about teaching and training non-ethicists in ethical decision-making.

VI. Forestalling Rationalization in Research

Rationalization is a process of explaining or justifying an action using plausible reasons that are nevertheless incomplete. One leaves out some beliefs and desires because one recognizes, either implicitly or explicitly, that these are beliefs and desires that one ought not to have and on which one ought not to act. The problem with moral rationalization is that this inevitably constrains the agent's ability to grow and develop as a moral agent. Without acknowledging the problematic beliefs and desires that the agent does have, the agent cannot work to change them or to overcome them with alternative and better reasons the next time they have the opportunity for moral reflection.

Rationalization is pernicious not because it is irrational or inaccurate, but because of this incomplete picture of reasons for action. This need not lean on a conception of "actual motivating reasons," as in Audi's account and others. Rationalization does not require knowledge of the inaccurate justification for an action and the correct justification.[43] Rather, I suggest that rationalizations which present an overwhelmingly positive or optimistic account of reasons for action are likely incomplete, even if a comprehensive account of actual reasons is not possible post-hoc.

If identifying rationalization requires determining when a set of plausible reasons are not the actual motivating reasons, then attempts to identify instances of moral rationalization are doomed; an individual's actual motivating reasons are nearly impossible to identify post-hoc. Instead of relying on a distinction between actual and plausible reasons to identify rationalization, it is likely that an individual is rationalizing if their justification presents an overwhelmingly positive picture of their reasons for action – when they are doing what is right and good, but not what is expedient or self-beneficial. Rationalization can be prevented through suspicion of explanations and justifications that are not psychologically complex – this is true of general behavior, as much as it is true of scientific and medical research.

In the context of research ethics, moral rationalization may be particularly likely in cases such as that of He Jiankui. While it seems inexplicable that He developed a set of ethics principles for the type of research he pursued yet that he himself violated, it is

possible that He's authorship of ethics guidelines functioned as a "supercharged" form of moral credentialing. Not only did they give He the confidence that he knew the ethical rules in this area, but they were ambiguous enough for him to conceive of himself as doing the right thing, even as people began to question his research. This conception of himself as a moral agent, who not only conducted his research ethically but was also helping to reduce the burden of HIV stigmatization, would have allowed him to act on the motivations rooted in the incentive structure of scientific research (the pressure for success, results, etc.) while rationalizing his behavior with a different set of reasons, which however plausible, were incomplete.

Ethical responses to He Jiankui's experiment have argued in favor of more regulations and guidelines for such research.[44] This is in line with much of applied ethics research, which proceeds as if moral knowledge and beliefs occasion moral behavior. Ethicists identify ethical issues for specialists in STEM fields, construct guidelines for emerging fields of empirical inquiry, and devise ethical training modules that will give certificates to those who complete the program, all to facilitate moral decision-making. This reinforces practitioners' sense of themselves as individuals with moral knowledge who hold the appropriate moral beliefs and who know what to do should a situation arise. Yet the phenomenon of moral credentialing suggests that, paradoxically, these programs may lead trainees to feel that they are good people who know what to do, but leave them unable to recognize their own complex motivations in actual situations.[45] Psychologists working on moral credentialing suggest that ethics training programs that focus on rules and principles might cause trainees to feel credentialed "simply because they can cite chapter and verse from a field-specific code of conduct."[46] Training via cases is equally suspect, because when the examples of misconduct are obvious, trainees may feel morally credentialed based on their ability to judge wrongdoing. And, in the case of He Jinkui, writing ethics guidelines oneself might have the strongest licensing effect of all.

Regulations and guidelines certainly can help to prevent misconduct – they can clarify expectations and motivate compliance by sanctioning those who violate them. The more specific and comprehensive the expectations, and the stronger the sanctions, the more likely that guidelines will have these effects. Yet when guidelines are ambiguous, are incomplete, or when they lack deterrents for misconduct, they may facilitate rationalization of unethical research practices. This is especially true if they stand alone – if, as LaFleur suggested, they are seen as effective safeguards against misconduct.

For instance, if guidelines simply state that researchers ought to exercise transparency regarding their methods, or that persons' autonomy must be respected, then a variety of behaviors – some ethically justified, and some not – will count as "exercising transparency" or "respecting autonomy." This allows researchers to believe that they are acting ethically while nevertheless committing misconduct. However, more specific guidelines can be challenging to create, given the rapid pace of scientific and medical research and the creativity with which researchers manage to violate the rules that do exist. Furthermore, as guidelines become more specific, more of them are needed to capture the diverse forms of misconduct, which can lead to unwieldy and impossible to learn ethics frameworks.

Given the difficulty of creating ethics guidelines that are both genuinely unambiguous and relatively easy to master, another way to prevent misconduct is to normalize ethical reflection on motivations, desires, and feelings – the conative side of

ethical reasoning. But merely acknowledging the presence of these conative features is not enough. Accounts of moral rationalization suggest that ethicists ought to facilitate reflection on emotional responses to people and to situations, observation of how these responses result in different kind of actions, and cultivation of the sorts of responses that accord with broader moral understanding.[47]

Yet reflection on conative mental states is not always possible, if they are not consciously accessible. As Arpaly and Schroeder note, reasons need not enter an agent's conscious awareness for them to be the reasons that rationalize an action.[48] To counter this problem of inaccessibility, psychologists working on moral credentialing suggest that ethical training ought to promote "a sense of self-awareness and humility, revealing the ease with which trainees themselves can slip into the rationalization process when motivated to do so."[49] Given that moral rationalization often involves an overinflated desire to believe that one is a good person, a key feature of efforts to prevent misconduct should not be to give practitioners the sense that they are good people who know what they ought to do, but that they are not. In other words, the less confident practitioners are about their ability to consistently act morally, the more inquisitive they will be about how conative factors play into their practical reasoning and the more suspicious they will be of any sense that they must be in the right.

As a first step, practitioners ought to be encouraged to be curious about, and even suspicious of, their reasons for action.[50] This suspicion can be engendered by shaking practitioners' confidence in their own goodness.[51] As studies of moral credentialing has shown, this means rethinking ethics training such that training does not just teach practitioners a set of ethics concepts (and gives them a certificate attesting to this fact), but rather trains practitioners in the skills of self-inquiry that enable reflection on the cognitive and conative components of their reasoning. What moral reasoning about research requires is not rules alone, but a critical interest in morality and a willingness to think openly about complex situations.[52] This suggestion aligns with contemporary efforts to reformulate research ethics according to a virtue ethics model, as opposed to a deontological or rule-based model, as well as with Henry Beecher's 1966 exhortation to train conscientious researchers.[53]

Second, ethicists, who often collaborate with practitioners in these fields to advance ethics knowledge in the form of guidelines and regulations, should be circumspect about their role in promoting ethical outcomes in these fields. When ethicists respond to misconduct with regulations and guidelines, they reinforce practitioners' understanding of ethical action as flowing from these regulations. This unnecessarily restricts the picture of ethical reasoning to cognitive mental states and ignores the influence of conative mental states. Ethicists ought to call attention to the force of the desire to believe in one's own goodness and provide opportunities for researchers to reflect on the blind spots in reasoning that such faith in oneself can obscure.

The goal is not to rid researchers of problematic desires but to acknowledge them so that one can incorporate them in decision-making. Without acknowledgment, it is even more likely that rule-based approaches to research ethics will not only distort researchers' reasoning but will give them the cognitive fodder they need to rationalize their unconsidered, desired ends. This is not to say that incorporating a more nuanced understanding of the relationship between motivation and reasoning will necessarily lead to more ethical research, or to decreased misconduct. Rather, this is one way to respond

to the observation that motivated reasoning can interact with ethics guidelines to facilitate misconduct.

Third, and most provisionally, a key facilitator of research misconduct is the incentive structure of science, in which productivity is materially rewarded and professionally praised more than conscientiousness, compassion, responsibility, and other character traits of researchers with integrity. Even more than researchers' moral reasoning and ethicists' collaborations with researchers, this culture is the hardest to change. To the extent that it is possible, researchers and ethicists can push back, refusing to reward and praise productivity for its own sake and validating the careful work of conscientious research. Yet ultimately, this change is an institutional one, and requires an organized movement.

Finally, although this is a paper on research ethics, moral rationalization as a form of motivated reasoning is not a problem unique to research, and neither are the possible solutions I have proposed. The need for self-awareness of one's desires and motives is central to any ethical project, and overreliance on rules and guidelines can limit the depth of any individual's ethical reflection. The reason that I highlight this ethical issue in research ethics specifically is that it seems at risk of being lost amidst the multitudes of guidelines for specialty fields and the countless ethicists who are recruited to draft them.

NOTES

[1] In Chinese, the family name is written first, and so He Jiankui is referred to as "He".
[2] Megan Molteni, 'Scientist who Crispr'd babies bucked his own ethics policy,' *Wired* November 27, 2018, Available at: https://www.wired.com/story/he-jiankui-crispr-babies-bucked-own-ethics-policy/ (accessed November 3, 2021).
[3] H. Jiankui, R. Ferrell, C. Yuanlin, Q. Jinzhou, and C. Yangran, 'Draft Ethical Principles for Therapeutic Assisted Reproductive Technology,' *The CRISPR Journal*, 1, 6 (2018): Retracted. DOI: 10.1089/crispr.2018.0051.
[4] Overt deception is not usually considered a form of motivated reasoning since the agent intentionally decides to act on their self-interested desire. Nevertheless, I include it here because it is an example of the influence of desire on decision-making.
[5] In my analysis, I use "misconduct," "compliance," and other similar terms to describe unethical actions by researchers, although some argue that these are different kinds of transgressions (James DuBois and Allison Antes, 'Five Dimensions of Research Ethics,' *Academic Medicine,* 93, 4 (2018): 550-555). In general, "compliance" functions here as a stand-in for "research ethics transgression."
[6] J. Dubois, J.T. Chibnall, R. Tait, and J. Vander Wal, 'Lessons from Researcher Rehab,' *Nature* 354 (2016): 173-175.
[7] Jason D'Cruz, 'Rationalization, Evidence, and Pretense,' *Ratio* XXVIII (2015): p. 329.
[8] Robert Audi, 'Self-deception and practical reasoning,' *Canadian Journal of Philosophy*, 19, 2 (1989): 247–266.
[9] Kevin Lynch, 'Willful Ignorance and Self-Deception,' *Philosophical Studies,* 173 (2016): 505-523.
[10] Jon Cohen, 'Inside the Circle of Trust,' *Science,* 365, 6452, (2019): 430-437.

[11] Audi *op. cit.* 8, p. 261.
[12] D'Cruz *op. cit.* 7, p. 327; Jason D'Cruz, 'Rationalization as Performative Pretense,' *Philosophical Psychology,* 28, 7 (2015): 980-1000.
[13] Eric Schwitzgebel and Jonathan Ellis, 'Rationalization in Moral and Philosophical Thought,' in J.-F. Bonnefon and B. Trémolière (eds.), *Moral Inferences (Current Issues in Thinking and Reasoning*), (Routledge, 2016): pp. 170–190.
[14] Jesse Summers, 'Rationalizing our Way into Moral Progress,' *Ethical Theory and Moral Practice,* 20, 1 (2017): p. 98.
[15] Joshua May, *Reason in the Moral Mind* (New York: Oxford University Press, 2018): p. 156-157. Psychologist Fiery Cushman has advanced an account of rationalization *simpliciter* in which rationalization just is the use of beliefs and desires to rationalize an action *post-hoc*, as opposed to reasoning via beliefs and desires in deciding whether to act (Fiery Cushman, 'Rationalization is Rational,' *Behavioral and Brain Sciences,* 43, e28 (2019): 1-59.)
[16] Summers *op. cit*. 14, p. 98.
[17] Schwitzgebel and Ellis *op. cit.* 13; Jesse Summers, '*Post Hoc Ergo Propter Hoc*: Some Benefits of Rationalization,' *Philosophical Explorations,* 20, sup1 (2017): 21-36.
[18] D'Cruz *op. cit.* 7, p. 318.
[19] May *op. cit*. 15, p. 156.
[20] Robert Audi, 'Rationalization and rationality,' *Synthese,* 65, 2 (1985): 159–184.
[21] Audi *op. cit*. 20*,* pp. 168-171. One complicating feature of Audi's account is the meaning of "actual motivating reasons." For Audi and others, one's actual motivating reasons are the reasons that played a causal role in the one's decision to act. However, determining which reasons these are (especially since there will almost always be a complex set of reasons occasioning a given action) is no simple task, and may be impossible.
[22] May *op. cit*. 15, p. 157.
[23] Joann Tsang, 'Moral rationalization and the integration of situational factors and psychological processes in immoral behavior,' *Review of General Psychology,* 6, 1 (2002): 25–50, p. 22.
[24] May *op. cit*. 15, 160-171.
[25] May also directly acknowledges the role that self-deception (or willful ignorance) can play in *ante hoc* moral rationalization: one might avoid a direct comparison between one's self-interested reasons and one's moral standards (May *op. cit*. 15, p. 167).
[26] Cohen *op. cit.* 10.
[27] Cohen *op. cit.* 10, p. 431.
[28] B.H. Lerner and A.L. Caplan, 'Judging the Past: How History Should Inform Bioethics,' *Annals of Internal Medicine,* 164, 8 (2016): p. 553.
[29] Henry Beecher, 'Ethics and Clinical Research,' *The New England Journal of Medicine* 274, 24 (1966): 1354-1360.
[30] Innumerable moral theorists have argued for this thesis, as well. e.g., Annette Baier, 'Moral theory and reflective practice,' in *Postures of the Mind* (Minneapolis, University of Minnesota Press: 1985).
[31] The field of research ethics education is nascent and there is a wide variety of approaches. E. Anderson et al, 'Research Ethics Education for Community-Engaged Research: A Review and Research Agenda,' *Journal of Empirical Research in Human*

Research Ethics, 7, 2 (2012): 3–19. Regulators are not immune from this emerging critical view of research ethics practices: Laura Stark, *Behind Closed Doors: IRBs and the Making of Ethical Research* (Chicago: The University of Chicago Press, 2011).
[32] Dubois *op. cit.* 6.
[33] Cairns et al., 'A phenomenographic study of scientist' beliefs about the causes of scientists' research misconduct,' *Research Ethics* 17, 4 (2021): 501-521, p. 512.
[34] Cairns *op. cit.* 33, p. 517.
[35] B. Monin and D.T. Miller, 'Moral credentials and the expression of prejudice' *Journal of Personality and Social Psychology, 81,* 1 (2001): p. 33; U. Khan and R. Dhar, 'Licensing Effect in Consumer Choice.' *Journal of Marketing Research*, 43, 2 (2006): 259–266.
[36] Monin and Miller *op. cit.* 35.
[37] Khan and Dhar *op. cit.* 35.
[38] R.P. Brown et al., 'Moral Credentialing and the Rationalization of Misconduct. *Ethics & Behavior,* 21, 1 (2011): 1–12.
[39] Khan and Dhar, Brown et al. *op. cit.* 35.
[40] Khan and Dhar *op. cit.* 35.
[41] Jonathan Haidt, 'The emotional dog and its rational tail: a social intuitionist approach to moral judgment,' *Psychological Review*, 108, 4 (2001): 814-834; S. Sonenshein, S, 'The Role of Construction, Intuition, and Justification in Responding to Ethical Issues at Work: The Sensemaking-Intuition Model,' *Academy of Management Review*, 32, 4 (2007): 1022-1040; M.C. Regan, 'Moral Intuitions and Organizational Culture.' *St. Louis University Law Journal*, 51 (2007): p. 941; J. Heath, 'Business Ethics and Moral Motivation: A Criminological Perspective,' *Journal of Business Ethics*, 83 (2008): 595-614.
[42] D'Cruz *op. cit.* 12, Summers *op. cit.* 14, 17.
[43] Schwitzgebel and Ellis *op. cit.* 13.
[44] Cohen *op. cit.* 10.
[45] Brown *op. cit.* 38. The risk of rationalization attaches not only to the trainees in these programs, but also to the ethicists who design them.
[46] Brown *op. cit.* 38.
[47] This is somewhat similar to efforts to combat implicit and unconscious bias through sensitivity training, to the extent that such training cultivates awareness not just of problematic behavior, but also of the roots of such behavior. When sensitivity training proceeds in the same way as other ethics training programs – by identifying problematic behavior, resolving dilemmas, and restating principles of respect – then this bears the risk of contributing to moral credentialing, rather than facilitating self-awareness.
[48] Nomy Arpaly and Timothy Schroeder, *In Praise of Desire* (New York: Oxford University Press, 2013): p. 56.
[49] Brown *op. cit.* 38, p. 9.
[50] One research group has recently been championing this work. E.g., Tammy English, 'Development and Preliminary Validation of a New Measure of Values in Scientific Work,' *Science and Engineering Ethics*, 24, 2 (2018): 393-418; Alison Antes, Ashley Kukendall and James DuBois, 'The lab management practices of "Research Exemplars" that foster research rigor and regulatory compliance: A qualitative study of successful principal investigators,' *PLOS One*, 14, 4 (2019): e0214595.

[51] Indeed, a recent study found that one of the strongest predictors of a measure of professional decision-making in research was a low level of narcissism (James Dubois et al., 'Professional Decision-Making in Research (PDR): The Validity of a New Measure,' *Science and Engineering Ethics*, 22 (2016): 391-416). In an earlier study, a group led by the same author found that self-centered thinking was the most common characteristic of cases of research misconduct (James DuBois et al., 'Understanding research misconduct: A comparative analysis of 120 cases of professional wrongdoing,' *Accounting Research*, 20, 5–6 (2013): 320–338).

[52] C. Paul and B. Brooks, 'The rationalization of unethical research: revisionist accounts of the Tuskegee Syphilis Experiment and the New Zealand 'Unfortunate Experiment,'' *American Journal of Public Health*, 105, 10 (2015): e12-e19.

[53] David Resnik, 'Virtue Ethics in Scientific Research,' *Accountability in Research*, 19, 6 (2012): 329-343; Mark Daku, 'Ethics beyond ethics: The need for virtuous researchers,' *BMC Medical Ethics*, 19, 42 (2018); M. Morris and J. Morris, 'The Importance of Virtue Ethics in the IRB,' *Research Ethics*, 12, 4 (2016): 201-216.