Business & Professional Ethics Journal 42:1
Spring 2023, pp. 33–53
DOI: 10.5840/bpej202346136

Why Should Ethical Behaviors Be the Ultimate Goal of Engineering Ethics Education?

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Abstract: Ethics is crucial to engineering, although disagreement exists concerning the form engineering ethics education should take. In part, this results from disagreements about the goal of this education, which inhibit the development of and progress in cohesive research agendas and practices. In this regard, engineering ethics faces challenges like other professional ethics. To address these issues, this paper argues that the ultimate goal of engineering ethics education should be more long-term ethical behaviors, but that engineering ethics must more fully engage with the fields of empirical moral and cultural psychology to do so. It begins by considering reasons for adopting ethical behaviors as the ultimate goal of ethics education, and moves on to discuss why ethical behaviors have not been adopted as the goal of ethics education. The paper ends by considering responses to these problems, why ethical behaviors should still be adopted as the ultimate goal of ethics education. (150 words)

Key Words: engineering, ethics, education, behaviors, moral psychology, cultural psychology

1. Introduction

Ethics education has been recognized as critical to engineering, reflected in an emphasis on ethics in educational accreditation guidelines, as well as funding for research that addresses ethics in engineering (National Academy of Engineering 2016; ABET 2016; International Engineering Alliance 2014). Curricula

have tended to take an applied and case-based approach, where professional engineering codes and/or philosophical ethical theories are introduced, which are then used to resolve questions that arise in cases concerning engineering and technology (Harris et al. 1996; Hess and Fore 2018; Van de Poel and Royakkers 2011). In recent years, however, there has been a proliferation of novel approaches, as well as disagreement concerning the form engineering ethics education should take, and criteria for determining what would count as success (Hess and Fore 2018; Harris 2008; National Academy of Engineering 2016; Steele et al. 2016). In part, this confusion stems from disagreements about the goals of ethics education.

Ethical knowledge, sensitivity, awareness, reasoning, judgments, and behaviors have all been proposed as educational goals, and different measures have been used to assess these, although it remains unclear how these outcomes are related (Hess and Fore 2018; National Academy of Engineering 2016; Van de Poel, Zandvoort, and Brumsen 2001; Zandvoort, van Hasselt, and Bonnet 2008; Downey, Lucena, and Mitcham 2007; Antes et al. 2009; Watts et al. 2017; Haws 2001; Steele et al. 2016). Despite its seeming intuitiveness—and assumptions by some researchers to the contrary (Rest et al. 1999)—ethical behaviors have typically not been adopted as the educational goal of engineering ethics or other forms of practice-based professional ethics. Instead, most have adopted one or some of the other myriad objectives mentioned above.[1] As a result, empirical research and educational curricula have lacked unifying theoretical frameworks and research agendas in professional ethics, impeding the development and promulgation of best practices. Having a single goal would allow for the standardization of engineering ethics education and progress in research, based on a clearer understanding of what does and does not work. Giovanni Frigo and colleagues have noted a similar call for constancy/consistency in engineering ethics education among virtue-based approaches (Frigo et al. 2021). Here the difference is that behaviors—rather than virtues—would be ultimate goals, a point further considered below.

This is not to claim that all curricula should be the same. Indeed, as is further discussed below, different kinds of curricular and extra-curricular interventions might be more and less appropriate to different groups. However, effective comparisons of such differences would depend—at least in part—on a common measure regarding what would constitute success. Towards that end, this paper argues that the ultimate goal of engineering ethics education should be more long-term ethical behaviors, an approach Charles Huff describes as "intended to develop ethical behavior over the course of an entire scientific

or engineering career" (National Academy of Engineering 2016). This is not to exclude, however, crisis-motivated behavioral responses, for example, micro-ethical approaches that focus on disasters, whistleblowing, and heroics (Harris et al. 2018).[2]

The importance of ethical behaviors to engineering ethics stems, in part, from the centrality of engineering to the modern-day world: As a professional discipline with wide-ranging consequences, behaviors are more import to engineering ethics than other forms of ethics education. To achieve this outcome, however, engineering ethics must more fully engage with the fields of empirical moral and cultural psychology.

This paper is divided into three parts: The first part outlines reasons for adopting ethical behaviors as the ultimate goal of engineer ethics education, that behaviors are what both professional organizations and the public ultimately care about. The next part of this paper considers why the adoption of ethical behaviors as an educational outcome would be contentious, that not only accurately assessing the effects of education on ethical behaviors would be difficult if not impossible, but also the assumption that other objectives—such as ethical reasoning or awareness—will lead naturally to more ethical behaviors. The final part considers responses to these problems, that empirical moral and cultural psychology have insights about and resources for adequately assessing the effects of engineering education on ethical behaviors.

This paper seeks neither to argue that engineering ethics is the only branch of professional ethics that should adopt behaviors as the goal of ethics education, nor to explain in detail how insights from moral or culture psychology would be used to ensure more ethical behaviors—what specific actions in instruction educators are supposed to take to ensure more ethical behaviors. Rather, it attempts to show why these insights would provide support for adopting ethical behaviors as the goal of engineering ethics, as well as outlining goals and objectives of—what we take to be—a much broader, multi-decade research and educational agenda.

2. Why Should Ethical Behaviors Be the Ultimate Goal of Engineering Ethics Education?

Engineering education has typically adopted ethical understanding and reasoning as learning outcomes, evident, for example, in ABET and Washington Accord guidelines (ABET 2016; International Engineering Alliance 2014)—in addition to ethical imagination, awareness, sensitivity, willpower, and others (Van de Poel, Zandvoort, and Brumsen 2001; Harris et al. 1996). However,

these objectives are shortsighted, since they take for granted the intrinsic good of ethical willpower, sensitivity, reasoning, understanding, and so on, failing to consider the ultimate goal these intermediary objectives should serve and in terms of which they would be understood as goods.

The ultimate goal of engineering ethics education should be more long-term ethical behaviors. "Ethical behaviors" is used here in a relatively broad sense, referring to a range of actions, many of which are involved in/have been discussed by previous educational and research agendas in engineering and technology ethics, including value-sensitive design, ethical leadership, activism/social justice, and diversity, equity, and inclusion (DEI) initiatives (Zhu 2018; Verbeek 2006; Cech and Finelli 2021; Klassen et al. 2020; Hodson 1999; Gu 2016; Rottmann and Reeve 2020; Karwat 2020).[3] Further, claiming that ethical behaviors should be the "ultimate goal" of engineering ethics is not to say that ethical behaviors should be adopted as learning outcomes. Learning outcomes need to be demonstrably measurable, and this is one of the reasons ethical behaviors have not been adopted as the goal of ethics education—a point further considered below. Rather, it means that learning outcomes should be identified, adopted, and measured in terms of the extent to which they contribute to or detract from ethical behaviors, as intermediary goals for and proxies of these behaviors. There are various reasons ethical behaviors should be adopted as the ultimate goal of engineering ethics education.

In the first place, professional organizations emphasize behaviors in their ethical codes, which derive their normative force from the unique positions of these organizations to conceive the ethical implications of technology. Professional codes from different disciplines, cultures, and countries all stress behaviors, for example, *performing* services, *issuing* statements, avoiding *acts*, *conducting* themselves, and so on (AlZahir and Kombo 2014). Codes often list character traits as well—for instance, honesty and diligence—indicating the nature and importance of *being* rather than simply *behaving* like a good engineer (Harris 2008). This is indicative of a wider trend to incorporate virtue ethics into engineering ethics (Frey 2010; Han 2014). However, it would be difficult to understand and motivate the importance of these traits apart from behaviors—in other words, the value of virtues in the absence of the consequences they produce (Greene 2014), for example, why honesty would be important were it unrelated to truth telling.

Ethical codes represent the professional organizations to which they belong. Professional knowledge requires a long period of education and training to acquire and is not, therefore, easily replicable, a fact that justifies professional

autonomy (Luegenbiehl and Clancy 2017): Because of their collective, professional knowledge, such organizations would be in the best position to know what it means to be a good engineer, contributing to the formulation of guidelines governing engineering and engineers. Engineers are not, of course, the only ones affected by engineering. The public is connected to professional organizations through government institutions. Professional organizations mediate the relation between individual engineers and the public, insofar as professional organizations contribute to design, production, and use guidelines that form laws and precedents (Luegenbiehl and Clancy 2017). Assuming governments represent their peoples, the behaviors of engineers are, therefore, what the public cares about as well.

Ultimately, only the behaviors of engineers affect the public, not their knowledge, sensitivity, awareness, reasoning, or judgments. Although one might well argue these have been chosen as partial or instrumental objectives—in other words, ethical judgments, reasoning, and so on serve/are necessary for ethical behaviors (a point further considered below)—they are not what one should ultimately care about or, therefore, what education should ultimately aim at. For example, the amount of ethical knowledge possessed by a civil engineer means little if his behaviors result in a building collapse. Conversely, a lack of ethical awareness by a mechanical engineer is inconsequential if her actions succeed in bringing a lower-emissions vehicle to market.

Although one could well argue that behaviors should be the ultimate goal of *all* forms of professional ethics, there are reasons for thinking the adoption of this objective should be especially important to/urgent in engineering: Engineering is involved in all facets of the modern-day world, with the tremendous capacity to make billions of lives better or worse. However, it is often difficult to discern and assign responsibilities for the effects of engineering. Engineers typically work on smaller parts of larger projects, where the effects of engineering are spread across space and time. Since engineering involves technology, which always involves a degree of novelty, it can be difficult to identify and control for the broader social effects of engineering (Van de Poel et al. 2012; Luegenbiehl and Clancy 2017; Harris et al. 2018). (By contrast, the positive or negative consequences of medical treatments, for example, are more easily discernible, since specific patients are affected by doctors in obvious ways. The benefits or harms associated with courses of treatments can be identified, and then appropriate actions can be taken. Although doctors potentially affect thousands of lives for better or worse—patients, family members, and so on—engineers potentially

affect billions of lives, for generations to come (Taebi 2021).) The question then arises of why behaviors have not been adopted as the goal of ethics education.

3. Why Haven't Ethical Behaviors Been the Ultimate Goal of Engineering Ethics Education?

Adopting this goal would be relatively controversial, since accurately assessing the effects of education on long-term behaviors would be difficult if not impossible. The source of this difficulty is at least three-fold: first, practical difficulties involved in assessing the effects of education on long-term behaviors; second, theoretical difficulties related to what it means to "behave ethically"; third, an assumption that ethical behaviors follow naturally from other ethics-related objectives, such as moral awareness or ethical reasoning.

First, accurately assessing the effects of education on long-term behaviors would ideally require dividing participants into experimental and control groups, exposing the former to ethics education while denying the latter, and then following both throughout their careers. Obviously, the resources required to do this would be staggering, and denying education to the control group would be ethically problematic. The second, theoretical difficulty consists in specifying what it would mean to "behave ethically."

"Ethics" can understood in different ways, raising the question of which understanding to use in assessing *ethical* behaviors specifically (Stich 2017, 2018; Haidt and Joseph 2007; Haidt 2012). This is especially true in engineering: Engineering and technology give rise to novel situations, where what it means to be ethical is not always clear (Luegenbiehl and Clancy 2017; Martin and Schinzinger 2009). An often-discussed example is self-driving cars—novel situations to which technology can give rise, bringing with them ethical quandaries. Teaching students how they should behave in specific situations—it has been argued—would be a futile endeavor, since the situations in which they might find themselves and how they should behave are unclear (Van de Poel, Zandvoort, and Brumsen 2001; Baum 1980).

Further, what it means to be "ethical" in engineering can be substantially different from commonsense understandings of the term. For instance, only performing within one's area of competence, and a commitment to life-long learning, are of critical ethical significance in engineering: If engineers perform outside their areas of competence, or fail to keep up with developments in their fields, then they could endanger the public. However, these are very different from—and have been judged by engineering students as relatively superfluous compared to—commonsense ethical principles, such as not harming others or

behaving fairly (Stappenbelt 2013; Clancy et al. 2017). Determining which understanding of ethics to use in assessing behaviors becomes even more difficult with the increasingly global natures of engineering and technology.

Engineering and technology are evermore cross-cultural and international, spanning different cultures and countries (Luegenbiehl and Clancy 2017; Murphy et al. 2015; Wong 2021; Zhu and Jesiek 2017). As a result, engineers and those working with technology are often separated in time and space from the effects of their work with technology, making it difficult to discern their effects (Luegenbiehl and Clancy 2017; Martin and Schinzinger 2009). Additionally, culture can affect ethics, such that peoples across different cultures and countries can have different understandings of ethics, and reason in different manners (Henrich, Heine, and Norenzayan 2010; Nisbett 2010; Ahlenius and Tännsjö 2012; Gold, Colman, and Pulford 2014; Buchtel et al. 2015; Dranseika, Berniūnas, and Silius 2018). According to the Western tradition of liberalism, part of what it would mean to be ethical is allowing each person or group to pursue their own conception of the good and, therefore, ethics. Any attempt to decide on one conception, imposing this on others, would be bad, a form of paternalism (Clancy 2017; Rawls 1971).

Finally, there tends to be an assumption within engineering ethics that ethical behaviors follow naturally and unproblematically from moral awareness and ethical reasoning (Fleddermann 2012). This could be based on rationalist assumptions stemming from disciplinary and cultural biases, specifically, ones connected to STEM fields/education and WEIRD (Western educated industrialized rich and democratic) cultures—namely, that knowledge of ethical principles leads to their application in rational decision-making, which is sufficient to motivate behaviors. However, individuals from WEIRD cultures are outliers on various psycho-social constructs, including self-concepts, thought styles, and ethical reasoning (Henrich, Heine, and Norenzayan 2010; Henrich 2020).

In ethical reasoning, individuals from WEIRD cultures give greater weight to individual intentions than consequences in judgments about the praise-/blame-worthiness of behaviors and corresponding punishments (Feinberg et al. 2019; Barrett et al. 2016). Although ethical reasoning among STEM students and practitioners has not been studied systematically, there are good reasons to suppose it differs between these groups and the general public. For example, engineering students report cheating more than humanities and social science students, and scientists are more likely to be atheists than the general public (McCabe, Treviño, and Butterfield 2001; Harding et al. 2007; Norenzayan 2015). Professional education/training affects ethical judgments, and neither

moral judgments nor ethical behaviors result primarily or exclusively from rational reflection. Moral judgments result from intuitions, closer in nature to emotions than reflection, and ethical behaviors are affected by various, often unconscious environmental factors (Haidt 2012; Roeser 2018; Greene 2014; Doris 2005; Bazerman and Tenbrunsel 2012). For all these reasons, behaviors have typically not been adopted as a goal of engineering ethics education.

4. Why Should Behaviors Still Be the Ultimate Goal of Engineering Ethics Education, and What Can Empirical Moral and Cultural Psychology Do to Achieve This Objective?

First, regarding practical difficulties, although it would be difficult to assess the effects of education on behaviors, proxies could be identified and measured, and work in empirical moral psychology could assist in this endeavor. This might include assessing ethical reasoning and understanding—as has been done (Borenstein et al. 2010; Drake et al. 2005; Loui 2005; Downey, Lucena, and Mitcham 2007; Hess and Fore 2018; Hess et al. 2019)—although not necessarily.

If ethical reasoning alone resulted in more ethical behaviors, then professional ethicists—arguably the most skilled in ethical reasoning—would behave more ethically than other groups. However, research has consistently failed to find evidence to support this assumption (Schönegger and Wagner 2019; Schwitzgebel and Rust 2010; Schwitzgebel 2009; Schwitzgebel et al. 2012; Schwitzgebel and Rust 2014). Scholars within engineering ethics have highlighted such concerns.

For example, Diana Bairaktarova and Anna Woodcock claim that "measuring ethical reasoning is insufficient for teaching engineering ethics because ethical reasoning has not been demonstrated to translate reliably into ethical behavior" (Bairaktarova and Woodcock 2017, 1130). Trevor Harding and colleagues found that, despite the fact engineering students' ethical reasoning abilities increased over a two-year period, they reported engaging in more dishonest behaviors during that period (Harding, Carpenter, and Finelli 2013), and Hyemin Han has discussed ways in which an emphasis on reasoning could lead to more unethical behaviors (Han 2014). Although a relation between ethical reasoning and behaviors exists, it is only a weak one and its nature remains unclear (Rest and Narvaez 1994; Villegas de Posada and Vargas-Trujillo 2015).

As was mentioned above, a growing body of research has found that ethical judgments are neither exclusively nor primarily the result of ethical reasoning (Haidt 2012; Greene 2014), and that behaviors are affected by unconscious, environmental factors (Doris 2005). Pulling on this work, some have argued

unethical behaviors are less the result of individuals making reflective, rational decisions to behave unethically and more the result of an inability to see situations and behaviors as having ethical import, resulting from the nature of human cognition, a form of bounded cognition called "ethical fading" (Bazerman and Tenbrunsel 2012; Sezer, Gino, and Bazerman 2015).

On this view, ethical fading could be combatted with "ethical framing," expectations of encountering ethical issues and a motivation to behave ethically, thereby raising awareness and facilitating action. By determining which factors are related to ethical framing, curricula would be in a position to target these factors, thereby ensuring more ethical behaviors—or at least helping alleviate the problem of ethical fading (Clancy et al. 2017; Clancy, Ge, and An 2022). Similarly, philosopher Sabine Roeser has connected empirical work in moral psychology to engineering ethics, highlighting the important role that emotions play in design work and technology ethics (Roeser 2018, 2012). Empirical moral psychology has numerous resources for better understanding and assessing the relation between behaviors and other more commonly, easily assessed learning outcomes. Although there are instances of engineering ethics engaging with research from moral psychology in this manner, work is still in its infancy (Gelfand 2016; Kim 2022).

Simply because understanding and reasoning are not sufficient conditions for ethical behaviors does not mean they are unnecessary. Future work could better determine the nature of this relation, for instance, the relative contributions of ethical understanding to behaviors. Doing so would allow educators to develop and assess curricula. Just as empirical moral psychology can help to understand the relation between ethical behaviors and factors such as understanding and awareness—thereby addressing practical difficulties associated with adopting behaviors as the goal of engineering ethics education—moral and cultural psychology have resources to explain what people mean by being "ethical"—thereby addressing theoretical problems.

First, simply because people disagree about what it means to be ethical does not mean people are correct in their claims, that any and all accounts would be true (Rachels 2011). However, the extent to which people disagree is unclear. Only recently have researchers conducted largescale, empirical studies on ethics, shedding light on the extent to which people agree or disagree about what it means to be ethical, and how culture effects such differences (Nisbett 2010; Fessler et al. 2015; Piazza and Sousa 2016; Ahlenius and Tännsjö 2012; Gold, Colman, and Pulford 2014; Buchtel et al. 2015; Dranseika, Berniūnas, and Silius 2018).

On the one hand, samples from WEIRD cultures tend to be outliers on various psychological dimensions (Henrich, Heine, and Norenzayan 2010). Since engineering ethics developed in the US, the field could be biased by these tendencies (Davis 1995; Luegenbiehl 2004). On the other hand, to a significant extent, people across cultures agree about ethics. For example, all peoples conceive of ethics in terms of care and fairness, where harming others and behaving unfairly are unethical, although what it means to harm others and behave unfairly towards them can differ (Haidt 2012; Piazza and Sousa 2016; Zhang and Li 2015; Yilmaz et al. 2016; Piazza et al. 2019). By better understanding these similarities and differences, educators would be in a better position to address them, crafting education and training for specific cultural and professional groups. Of course, this would require engineering educators to teach and conduct research on diverse student bodies—not only WEIRD students—highlighting the importance of a limited but growing research agenda (Clancy 2020; Luegenbiehl 2018; Clancy et al. 2017; Downey, Lucena, and Mitcham 2007; Balakrishnan, Tochinai, and Kanemitsu 2018; Murrugarra and Wallace 2015; Zhu and Jesiek 2020; Zhu 2021). This would be especially important in engineering.

As was mentioned above, what it means to be "ethical" within engineering can be different from commonsense understandings (Stappenbelt 2013). To an extent, people are in a poor position to make this judgement, since technology and engineering are intrinsically novel, making it difficult to know what their effects will be ahead of time (Luegenbiehl and Clancy 2017; Martin and Schinzinger 2009). However, by better understanding how people think about technology, and what they consider right and wrong, educators and policymakers would be positioned to anticipate and respond more effectively to problems as they arise (Rogers 2003). For example, the Moral Machines project sheds light on how people think about the ethics of autonomous vehicles, as well as the effects of culture and nationality on these judgments (Awad et al. 2018). Although this work is merely descriptive in nature, these findings would be essential to frameworks of risk assessment that depend on both descriptive and normative concerns (Taebi 2017).[4]

Next, claiming the ultimate goal of ethics education should be ethical behaviors does not mean that curricula need to/should teach specific behaviors (Van de Poel, Zandvoort, and Brumsen 2001; Baum 1980). Rather, it simply means that decisions about what is taught, assessed, and how are guided by the ultimate goal of increasing ethical behaviors. As was mentioned above, findings from empirical moral psychology can help to make these decisions, for instance, the extent to which curricula should focus on cultivating ethical reasoning or

empathy, and how these two activities should be related (Hess et al. 2019; Hess, Strobel, and Brightman 2017). This would also be true of programs on/training in ethics-related topics affecting industry and governments.

For instance, if the goal of a DEI initiative is a diverse workforce, then training should be assessed in terms of the extent to which it fosters this goal. This is unlikely to be a simple or straightforward process. Workforce diversity is affected by various factors, many of which might be unaffected by the actions of employees. That being the case, such initiatives would need to disentangle different goals, identifying which kinds of actions would be the most likely to achieve these goals. Some kinds of ethics programs and training are likely to make little or no sense, especially in cases of structural inequalities, including race and gender imbalances. That is not to say that these issues fall outside the purview of ethics. Rather, different kinds of programs and training would be more effective in facilitating particular actions and, thereby, fulfilling specific goals.

Again, the point is that adopting ethical behaviors as the ultimate goal of training and education would consist in identifying and assessing learning outcomes in terms of the ways they contribute to or detract from ethical behaviors, taking into account the complex milieus human beings occupy. Again, there is no reason to think this would be a simple or straightforward process—rather, the difficulties involved are exceedingly complex—and the goal of the present paper is not to spell out in detail to educators how this would be accomplished. Rather, as mentioned at the beginning of this article, the authors conceive of this research and educational agenda as taking decades to complete. Here the goal has been merely to identify a long-standing problem, pointing towards a body of ostensibly underappreciated work to address this problem.

Finally, liberalism's apparent neutrality regarding different, competing understandings of ethics and the good is a myth: Liberalism's neutrality is itself the result of a value judgment, guided by a conception of that which is desirable (Clancy 2017; Galston 1986). This conception is based on an understanding of personhood in liberal terms, although it is not clear that this understanding of personhood is correct, or that it is shared across cultures (Linquist et al. 2011; Henrich 2020). Regarding engineering ethics specifically, professions are never value neutral: They exist to provide society with goods deemed indispensable, such as education in the case of teaching, and health in the case of medicine. As a profession, engineering is no exception—its existence implies judgments regarding that which is valuable: Engineering and technology exist to make the world a better place, or at least leave it no worse off (Van de Poel and Royakkers

2011; Luegenbiehl and Clancy 2017). Were this not true, no one would want the goods and services for which engineers are responsible, and engineering would cease to exist. Hence, engineering and technology can be used as touchstones for formulating common, ethical guidelines (Luegenbiehl and Clancy 2017; Luegenbiehl 2010). Although engineering and technology are affected by cultural values and national policies, in all times and places, they exist to achieve similar ends. How they do so might differ, but they are guided by common goals and, therefore, values.

5. Conclusion

A growing consensus exists that ethics should be central to engineering. However, there is evermore disagreement about the form engineering ethics education should take. In part, this results from disagreements about the goals of this education, which can hamper the development and coordination of long-term, large-scale research agendas and educational practices. To address these issues, this paper has argued that long-term ethical behaviors should be the ultimate goal of engineering ethics education, but that engineering ethics must engage with empirical moral and cultural psychology to make this possible.

Behaviors are what professional organizations and the public ultimately care about. These have generally not been the goal of education, since it is difficult to know what "behaving ethically" would mean, and hard to assess the effects of education on long-term behaviors. Instead, curricula have tended to focus on ethical understanding and reasoning, despite it being unclear whether these result in more ethical behaviors.

Empirical moral and cultural psychology have resources for understanding what people think about ethics, how judgments converge or diverge, why, and the relation between ethical awareness, emotions, motivation, knowledge, and behaviors. Since ethical behaviors comprise other educational and research agendas within technology and engineering ethics—such as value-sensitive design, ethical leadership, social justice, and DEI initiatives—adopting behaviors as the goal of ethics education would strengthen this work. However, claiming that ethical behaviors should be the goal of education does not mean that curricula should consist merely in telling people how to behave in given situations. Behavioral guidelines for ethical engineering can be derived from the value dimensions of engineering itself, which transcend and can guide engineering activities in different national and cultural contexts.

Notes

An earlier version of this paper was presented at the American Society for Engineering Education and published in its proceedings. This is an expanded version of that paper, based on the integration of subsequent feedback, as well as responses to comments and concerns from audience members and readers. This publication was supported by NSF grant #2124984.

1. We are grateful to an anonymous reviewer for bringing this point of confusion/misunderstanding to our attention. In many cases, this results from the fact that individuals and fields responsible for developing and delivering curricula are different from those responsible for assessing it.

2. Again, we are grateful to an anonymous reviewer for bringing this point to our attention.

3. The relation between this work and our claim is further discussed below.

4. Concerning the normative implications of moral psychology more broadly, see, for example, Greene 2014, Haidt 2012, Bruni, Mameli, and Rini 2014, and Kumar and Campbell 2012.

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