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Looking Beyond the Technical: The First Step in Integrating Ethics

Integrating instruction in ethics into the technical education curriculum, I will assume, is a Good Thing. The major reason seems clear: If instruction in ethical deliberation has been consistently treated as a standard part of a technical education, and if ethical considerations are always shown to be inseparable aspects of the design process and the exercise of professional expertise, then ethical *practice* will be both more pervasive and more skilled throughout the technical disciplines. I wouldn't want to claim that instruction in ethics is some kind of panacea that can turn people good, but it can help minimize the kind of unthinking oversight or narrow-minded blunder that even the best-intentioned people can fall into. In any case, for the purposes of this paper, the value of integrating ethics into technical education is assumed, not directly argued for.

How can we integrate education in ethics into technical education in a natural way that does not instantaneously turn off the students or seem to them to be an irrelevancy stuck into their courses that distracts them from the real purpose at hand? One could try requiring a course in ethical theory. But that is hardly "integrating ethics." It rather teaches students that moral deliberation is done separately (and usually by different people) from the engineering or technical skills they are there to learn. Substituting a case-based approach for the abstractions of ethical theory improves the situation somewhat, but if this approach is confined to a separate course, it still doesn't change the fundamental lesson that *other* people do ethics or that it is done only *outside* the exercise of one's technical skills. Really integrating ethics into technical education has to make it *pervasive*.

How can we make ethics a pervasive consideration without asking every teacher to be a Renaissance Thinker, equally at home in philosophy and in the specifics of some technical field? Does everyone have to master the intricacies of the categorical

imperative, the umpteen different versions of Utilitarianism, a full understanding of the manifold virtues of a good person according to Aristotle? And if all that theoretical machinery needed constantly to be brought to bear, when would there be time left for the technical education itself? We cannot ask that everyone be a professional moral theorist.

My argument today is that we need not demand that everyone get professional training in ethics: we can point to several steps open and available to everyone involved in technical education that, conscientiously applied, would take us a good deal of the way towards a thorough integration of ethics into the technical curriculum. I will focus today on one such step and try to ground it in a little ethical theory and a little practical experience. This first step is achingly simple. (But aren't philosophers supposed to make much of pointing out the obvious?) It is this: integrating ethics into the technical curriculum requires that all those involved in technical education, in every activity, look beyond the immediate purpose of that activity.

I

I will begin with some reflections on ethical theory that motivate my thesis. One of the first things students note about ethical theory is that there is no agreement. Kant says the Utilitarians operate with a principle that misses the very point of morality; the Utilitarians think just about the same thing of Kant. The virtue theorists proclaim a plague on both those houses, for they claim principles are not at the heart of morality in any case. To students without a great deal of philosophical sophistication, this apparently chaotic state of affairs seems to have one of three effects:

- (1) it allows them to choose (or just accept as an inheritance) a set of dogmatic values that they cannot justify. Rational reflection on morality just leads to confusion; only dogmatic belief, based on revelation or historical accident or whatever, can offer a solid ground for one's action,
- (2) it reinforces the easy relativism many students develop to try to cope with the

fact that people and positions the students respect nonetheless conflict deeply on ethical issues. This seems to allow everyone to be right and respectable, even if it does so at the cost of inconsistency.

(3) it supports a general moral nihilism. All moral opinions are wrong; morality is nothing but another (disguised) form of the struggle for power.

All of these positions are ultimately untenable, and none of them follow logically from the confusing state of moral theory. Theoretical disagreements among the ethicists do not license irrational attitudes towards ethics.

As much disagreement among moral theorists as there is, there are also several notable areas of more fundamental and near-universal agreement. This wide-spread and fundamental agreement is something we can build on.

After all, the moral theorists are not *inventing* morality; they are not *creating* a practice of moral deliberation. Moral deliberation is a nearly universal practice that may exhibit some local and even idiosyncratic variation, but is recognizable across otherwise large social and cultural differences. For most of us, however, the practice of moral deliberation is not one we have an *explicit* theory of. It is a practice we can engage in with great skill and sophistication without having a well-articulated, reflective understanding of its rules or its general structure. The moral theorists are engaged in the attempt to articulate the rules and structure of moral deliberation, but we certainly need not, cannot, and should not await their results to engage in the practice ourselves.

Technical educators and their students all have a more or less proficient command of the practices of moral deliberation, but they often are not encouraged to extend the practice into the complex areas of their technical expertise. The key to integrating ethics into technical education is to allow educators and students to see that applying their already existing skills in moral deliberation to technical contexts is justifiable and fruitful. And to do that, we need not have a position on every issue in moral theory. Focusing on the areas of wide-spread agreement will allow us to invoke

the moral skills most people have acquired without presuming any special moral competence.

II

In this section of the paper, I want to point out one area of wide-spread agreement about morality, supporting my claim with a very quick and superficial survey of the nature of moral deliberation and the major theories of morality. In the following sections I will draw the lesson for technical education.

Everyone agrees, I hold, that in any *moral* deliberation, the considerations relevant to that deliberation extend beyond the particular purpose of the action in question and beyond the narrow interests of the deliberator. I am presuming a general picture of moral deliberation in making this point. Insofar as we are deliberative at all, we do not respond to our situation in the world merely instinctually or ‘immediately’ (as Hegel would have said). Rather, our responses to the world are *mediated* by reasons and considerations; there is a *rational* structure to our action, not just a causal structure to our behavior. (This is not to say that every action gets reasoned to; often the structure of reasons that mediate our actions are reasons recognized or assimilated in the *past* and made habitual or second nature.) The big question then is, what counts as a reason for action? Pretty much everyone grants that once one has some purpose, some goal to be achieved, the fact that something is a means to that end is a reason for action. But are there purposes we must have or may not have? means we are forbidden from using? The disagreements among various moral theories have to do with which kinds of considerations morality demands that we allow to mediate our actions.

Let’s suppose that there are some purposes at hand, e.g., things an agent wants. They can vary widely: desire for companionship, for getting ahead in the workplace; perhaps the purpose does not stem directly from personal matters: someone has been assigned the task of developing a device to do X or to write a paper on something. What considerations are relevant to carrying out the purpose, the why and the how of

the action?

It is virtually trivial to point out that considerations of the means to the end are certainly relevant. Figuring out how one can accomplish the task is not, however, directly a *moral* consideration. Furthermore, it can never be enough all by itself to conclude the deliberation, for it is isolated from the rest of our conative structure. None of us has only one purpose or desire at a time. How do we choose from what is often a cacophony of desires which are the ones to act on? Some means to some ends may either facilitate or preclude the achievement of other ends. Sometimes (always?!) the cacophony of ends we have is inconsistent; we could not satisfy all of them. One could, of course, always go with whatever desire is strongest at the moment, frozen like Buridan's ass whenever no particular desire is ascendent. But such a creature would certainly not be a moral agent, and would probably not be even thinly rational. Describing such a creature as deliberating would probably be misleading. So how do we organize our actions under these circumstances? We must draw upon further considerations.

The first obvious move is to organize what we might call the personal realm of reasons for action. We must construct some hierarchy of goals or ends, so that we can make some choices about what it is we really aim at. And the most obvious elementary hierarchy of goals is prudential. Everyone seems to grant that one has reason to do what is in one's long-term self-interest, and that considerations of long-term self-interest can override considerations of short-term interest. Indeed, any being not capable of overriding short-term inclination in favor of long-term self-interest is probably not capable of anything correctly described as *deliberation*. But even with such an ability, it is probably correct to say that some being that operates only on the basis of self-interested or prudential considerations is not yet a *moral* agent, and in that sense purely prudential deliberation is not a form of moral deliberation. The capacity for prudential deliberation, however, is probably a necessary condition for the capacity for moral deliberation.

This is the first way in which morality demands that we look beyond the immediate. In every case, we should have in mind the effects of our plans and actions on our longer-term self-interest. Can we stop there? Morality traditionally extends well beyond long-term prudential interest, though the arguments that it *must* do so are often thought to be problematic.

The moral theorists nicely lay out the most viable candidates for the other kinds of broader considerations. The Utilitarians tell us to look not only at our own pleasures, pains, and satisfactions, but at *everyone's*. They claim these are the only considerations worth thinking about. But even if we don't accept that these are the *only* relevant considerations, there is a strong case for believing that they are always potentially relevant.

The Kantians tell us not to worry about pleasure, pain, or satisfaction. Instead, they say, we must look to the intentions that generate our actions and ensure that they can pass the test of the Categorical Imperative. The important considerations concern, not the consequences of our actions, but their formal character and the character of the process that generates them. Could others rationally consent to the policy I implicitly endorse for myself in acting intentionally? Again, the Kantians claim that these are the *only* relevant considerations. We can deny that while accepting that they are always relevant.

The virtue theorists tend to think that both Utilitarians and Kantians are improperly obsessive about rightness or wrongness of *actions*. There is a complex, multi-dimensional ideal of humanity that we should strive to emulate. The ideal cannot be summed up in a set of context-free rules to be applied indifferently across situations; it is rather a combination of sensitivity to the complex situations in which we find ourselves and the habitual ability to respond to them in appropriate and virtuous fashion.

There are other competing (though not always conflicting) views of the right set of considerations by which our actions should be governed. For example, Feminist

ethical theory has been very active and extremely illuminating in emphasizing, for example, the importance of *care* in our moral activities.

Although moral theorists have argued for a long time about which of these supposedly competing theories is correct, it's hard to escape the conviction that they each have an important part of the story. Each is right that the considerations they put at the forefront are important, even indispensable. But we can doubt that they are right in claiming exclusivity for one and only one set of considerations. That leaves us with a significant problem: these various kinds of considerations can clearly conflict with each other. When they do, how do we resolve the conflict? Well, I have no idea at the moment how to answer that question, so I won't try.¹ I will mention that if the question itself rests on the assumption that somehow there is always a unique right moral solution or resolution, then maybe we should question the assumption.

A quick survey of moral theory, I think, therefore indicates that moral action must always look beyond the immediate goal to consider (1) more distant consequences, for our own long-term interests and particularly for other sentient creatures; (2) the nature of the action and the universalizability of the policy it embodies; and (3) the contribution of the action to the constitution of a virtuous character. The fully moral agent must have her eyes wide open.

III

So much for my theoretical reflections. How do they bear on the question of integrating ethics into technical education? The currents I've just been tracing run counter to the normal impulse of technical education, and in order fully to integrate ethics into technical education, that "normal impulse" must be fought. The "normal impulse" of technical education is to narrow focus. This is not in itself a bad thing, nor is it unique to technical education. But it is very difficult to avoid in a technical

¹This is the principal reason why ethical theorists argue that one consideration is predominant.

education for a number of reasons.

Technical education involves mastering material that is, virtually by definition, difficult. It requires a great deal of focus, concentration, and time. If the structural engineers don't learn how to calculate stresses properly, incalculable and irreparable harm will be done, regardless of how ethically the engineers think. If the medical technicians do not operate the radiation machines correctly, their moral scruples won't prevent significant harm. If integrating ethics into technical education would in any way interfere with the time, energy, or focus the students (and teachers) need to get it right, then success in integration would be a pyrrhic victory.

Second, the students can be very resistant to a broader focus. I can draw here on my own experience. As a young graduate student at the University of Pittsburgh I was assigned to TA Philosophy 3 — a philosophy course taught especially for freshman engineers. The engineering faculty rightly believed that engineers need a broader perspective, but, to my mind at least, wrongly believed that this should happen through a special course taught early in the students' undergraduate careers. The eager young engineering students, however, saw the course simply as an irrelevant requirement that slowed them down in their quest to learn how to build bridges, buildings, cars, chemicals, and nifty electronic devices. (Interestingly, the few older students transferring into Pitt's engineering program as juniors found the course a welcome change of pace from the narrow focus of several years of engineering courses.) The course was a long-running disaster, for most of the students just couldn't see the point, despite extraordinary efforts from the teachers. They saw the technical education they were acquiring as imparting an independent skill they desired, not as imparting a way of life, a way of contributing to the world that carries with it responsibilities and duties as well as the privileges they hoped to obtain. They did not see it as preparation for a particular way of being a human being enmeshed in a community, supporting and supported by others; they saw it as preparation for a well-paid job doing some interesting things.

Third, technical expertise is usually treated as something quite independent of wisdom or moral sensitivity or sagacity. Indeed, many people think that it actually interferes with wisdom. The image of the technician who does things simply because she can is all too familiar in our society. So is the image of the technician whose expertise has rendered her insensitive to the feelings of others, perhaps even to her own feelings. The idea that the technician can do the job well, perhaps even best, when focused solely on the job, paying no heed to anything else, is ultimately a pernicious oversimplification. The persistence of these ideas or images, even if they are widely regarded as negative images, licenses people to behave in these ways, for it is a way to be a person, even if not an ideal person.

Fourth, the faculty in technical courses often do not feel comfortable raising and discussing ethical issues. They claim technical expertise; that's where their credentials are, not as moral savants. Notice that this feeling presumes the separation of moral wisdom and technical expertise.

However, the actions of technicians are profoundly enmeshed in the social fabric: they affect people deeply and broadly. Such actions must reflect the moral lifeblood of the social fabric if they are not ultimately to damage it. Technical education must also be moral education. The isolation of ethics must be overcome. But how, in the face of the roadblocks I've reviewed so far?

IV

We need to make moral reflection a normal, natural part of technical education. I'm tempted to say that we need to demystify moral reflection, but I don't think it can really be said to be mystified. Rather, it has been balkanized. In this age of ever-increasing intellectual specialization, moral reflection, the most distinctive of human traits, is too often assigned to purported specialists. We know it can't really be that simple: we are, each of us, faced with moral decisions daily. Most of the time we may not even realize that our actions contain small-scale moral decisions on a constant basis,

so accustomed are we to making these calls. The unconsciousness of everyday morality is one of its dangers, however. Having acquired our values from our parents and surrounding culture and getting daily practice in applying them, we have little reflective grasp of exactly what we're doing. Consequently, and understandably, when we face a situation in which the consequences of our decisions are clearly of great moment, we balk. We turn to help from the moral theorists (or more often, the local priest, minister, or rabbi). There are times this is appropriate, but we all need to realize the extent to which we are all highly sensitive monitors of morality with trained responses that reflect years of work. This is true of both the students and the teachers in a technical program, as it is true of all of us. But we don't always bring our moral monitors to bear on the situations that confront us.

The isolation of ethics from other competencies enables us to turn off our moral monitors, especially in situations where technical expertise is mobilized. We need to overcome this easy but dangerous temptation, and we need to develop habits that discourage others, our children and students especially, from falling into this bad habit. The way we discourage our children and students from isolating the ethical in their own lives is by setting a proper example and keeping it a constant presence in our own lives and teaching.

V

So what to do? I conclude from the reflections of the moral theorists that moral deliberation involves a complex consideration of broader consequences, process- and principle-oriented considerations, and issues of character, but I also conclude that we all have skills in moral deliberation and need not go it alone in any case. Moral deliberation is often a communal enterprise, as we ask others for advice and engage in moral disputation. Technical educators are no different in these regards than other people. They do have more experience and maturity than the typical 18-21-year-old student, although technical students are not uncommonly older.

My recommendation for the first step in integrating ethics into technical education is therefore simple: Encourage technical educators to remain open to the full range of considerations as they teach their specialties and not to shy away from pointing out considerations, wherever they find them, that make a moral difference. They need not set themselves up as moral sages or authorities; they need not (and probably should not) attempt to dictate any particular moral doctrines or conclusions to their students. But by initiating their students into a technical expertise that has never been divorced from the rich context of human activity, one that has been linked from its inception to the moral monitors and deliberative processes that almost every human develops in the course of maturation and socialization, the isolation of the ethical might be overcome.

For instance, it is easy to see some of the benefits of developing computer speech recognition: accessibility for the handicapped, hands-free operation of devices, greater flexibility in the tasks to which computer technology can be applied, etc. But shouldn't people also be aware of less salient effects, such as enabling cheap and widespread surveillance of conversations? I find most of my students are surprised when that consequence of speech recognition is pointed out, and it takes them a while to start dealing with it constructively. When we are thinking ethically throughout the development or the learning of a technology, we are better prepared to anticipate undesirable consequences of our actions and to find workable answers to the problems that arise.

One difficulty that the approach recommended here makes inescapable is that different students will generate different answers to the moral problems that arise. Confronting ethical disagreement makes many people uncomfortable and, as we've seen, their reaction is often to retreat from confronting the problem deliberately. The educator can make a significant contribution here, not so much by leading his students to The Right Answer, as by helping them see that the ethical disagreement they confront can be a resource that helps guarantee the adequacy of the ethical deliberations

they undertake. As I've said, moral deliberation is often a communal enterprise, and in a technical project that may affect a large number of people it is only appropriate that many different moral points of view be heard in the effort to find the most satisfactory solution.

In sum, as students learn the technical intricacies of computer programming, chemical engineering, or medical technologies, they must also learn to think beyond the immediate problem and consider how their actions will bear upon others, how the decisions they are implementing have been arrived at, and how their modes of action impact the persons they are and are becoming. The teacher should present technical skills and methods within an accompanying context, so that students are always aware of how deeply interwoven into the fabric of life their newly uncovered skills normally are. An accompanying context itself ought to be multi-dimensional, including the business context, the social context, and even the personal interactions of technicians. In such a context-aware situation, the natural moral sensitivity of most humans can be guided into an alert watchfulness that could at least ward off the most significant harms.

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