

Ethical Tools More Useful than Rules

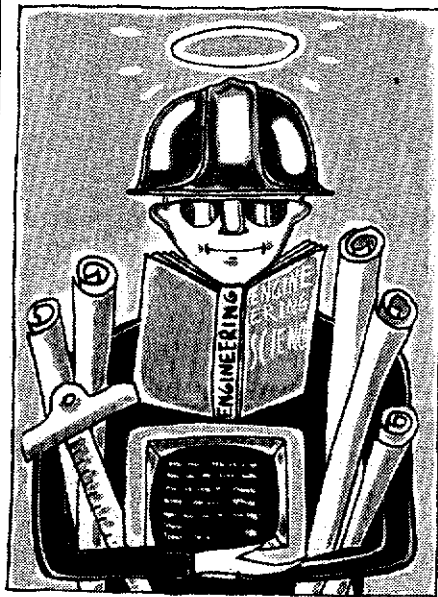
Editor's Note: Last fall's campus-wide colloquium entitled "How to Be Good" drew a standing-room-only crowd of students, faculty, and staff to the Sala de Puerto Rico to consider the ethical and moral issues embedded in the work of scientists and engineers. The panelists were Professors Noam Chomsky, Philip Morrison, and Sheila Widnall, '60. Disagreement with Professor Widnall's presentation led to a two-part column in The Tech by Jonathan Richmond. Richmond is a graduate student in the Department of Civil Engineering and teaches 1.962, a subject that includes the application of moral philosophy to questions of transportation policy. What follows is a condensed version of Richmond's column.

I doubt that there is much overt dishonesty at MIT. But there is much narrowness—a tendency to ignore the context in which engineering work is set, to avoid asking whether the research carried out can be defended ethically, and to avoid asking if the techniques used imply an ethically justifiable system of evaluation.

Ethical discussions tend to focus on—and quite rightly condemn—the deliberate, conscious manipulation of techniques for financial gain. The stated ethics of engineering practice usually deal with black-and-white issues where it is clear whether behavior is ethical: the selling of an unsafe product, the dumping of hazardous waste, or the falsification of financial reports, for example. Such cases of obviously corrupt behavior do draw attention, if not enough. Despite the unpalatable behavior of a minority, most engineers are, after all, honest. Most would object to releasing a product that they knew to be defective or dangerous. Few professionals would condone explicit lying in presenting financial data. Many, however, leave unexamined the most basic tenets of their professional lives.

That is why a far more prevalent problem, the "honest" misapplication of techniques, is seldom addressed. It attracts little attention because those responsible are not even aware of it.

The most provocative comment of the colloquium "How to Be Good" came from graduate student Daniel Glenn, who touched on just this issue. People who manufacture bombs, he said, are making "a very unsafe product, and [their] job is to make it as unsafe as possible." While many professionals will be concerned to



make sure that the product is built to specification and within the budget, few will question whether it should be built at all.

That crucial question is too often left unexamined not only in the defense industry, but in all areas of engineering endeavor. And no wonder. It is much easier to accept your task as given than to challenge the larger assumptions behind that task, which may include the acceptance of killing people (as in the defense industry), the disruption of community (as is occasioned by many highways, office complexes, and other civil engineering projects), or the alteration of the very way we receive and understand information (as is implied by many computer science developments) or (as with research in artificial intelligence) the way we understand ourselves. In all cases the engineers may see themselves as behaving perfectly ethically according to their own narrow terms of reference.

Existing courses in engineering ethics of the type Widnall advocates fail to provide a systematic and rigorous examination of ethical issues fundamental to all engineering practice. Reading case studies in which engineers behave in corrupt ways and discussing how they might have acted better can make students feel good. But doing so does not necessarily provide a way of asking the essential "meta" question of "Am I asking the right question?" when dealing with particular

engineering approaches or techniques. Nor does reading such studies instill a theory capable of unmasking the ethical presuppositions of engineering inquiry in general.

It is part of engineering mythology that work can be done "objectively," and that if professionals apply their techniques correctly and without bias, then they have properly discharged their duty. But there is no one correct way of choosing assumptions, and it is generally the choice of assumptions as much as the application of engineering techniques that determines what impact a project will have on the lives of thousands or millions of people.

There is a rather naive belief around MIT that taking more courses in humanities will in itself somehow make one more humanitarian. That is a myth. Relying on humanities to make students better people also conveniently avoids the issue closer to home. While engineering departments can teach techniques, the humanities can provide for the humanistic side of things, it can be argued. But it is only when engineering is made to clash directly with its ethical assumptions that real progress can be made.

What it boils down to is that ethics as seen by Widnall is treated as something that is "fascinating" rather than fundamental. Ethics is treated as one of the pursuits of a well-rounded person, like art or music appreciation. It sits off to the side, rather than taking center stage in the engineering curriculum. That is wrong, for there is nothing in engineering that does not have ethical implications, neither the choice of a subject to be studied nor a means for studying it.

Despite all the above gloom and doom, there are some encouraging signs at MIT. Students in the Technology & Policy Program and the Program in Science, Technology, & Society are being made aware of many of the larger issues affecting our understanding of technology. The Integrated Studies Program for freshmen also sets a healthy precedent. New this year, furthermore, are "context" subjects taught by engineers and humanists, scientists and social scientists, who explore the context in which science and engineering are set. These courses are, however, taken by a small minority of MIT students, and only by those predisposed to be sympathetic to such issues.

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What is needed is a required subject that comprises the best of MIT's progressive teaching on technology and its context, one that also emphasizes the systematic application of moral philosophy to engineering practice. Philosophers have long considered the moral implications of different systems for evaluating what is morally good. They have long been critical, for example, of utilitarianism (which demands "the greatest good for the greatest number"), an ethical system that tacitly lies at the heart of engineering.

Subjects in ethics offered by the Department of Linguistics and Philosophy do cover this and other relevant material. But they generally don't apply it to engineering in particular. Philosophy subjects could be designed, however, to prepare students to rigorously critique the ethical assumptions of material introduced in engineering subjects.

What is also needed is a direct consideration of such issues in engineering subjects themselves. Students should be encouraged—by their engineering professors—to

reflect upon the ethical nature of any given technical approach, rather than merely learn to use it.

There are few prospects of this happening in the immediate future, if only because today's faculty is not trained to think about such issues. But at least by encouraging today's students to criticize rather than merely compute, and by providing the analytical apparatus for doing so, we can look forward to a new generation of teachers capable of teaching more ethically aware curricula.

The hardest lesson of all is that there is no one way "to be good." The very title of the colloquium suggested that we can learn to be ethical in the same way we can learn mathematics. The role of education, however, should not be to teach rules of ethics, but to instill a mode of thinking that compels us to consider the ethical nature of everything we do, rather than allowing us to employ, robot-like, techniques with deep moral consequences of which we are only dimly aware. □