# Chapter 84
# Ethical Theories and Teaching Engineering Ethics

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## ABSTRACT

*As an area of academic study, engineering ethics focuses primarily on practical ethical issues. A primary aim of the study of practical ethics is to help students make good ethical decisions in whatever practical endeavors they may undertake, including in their chosen careers. The authors argue that reflection on the sorts of ethical problems that arise in engineering practice should be the starting point, with ethical theory coming into view primarily in this context. This is in contrast to a more "top-down" approach that tries to "apply" theory to practice only after laying out a spectrum of philosophically grounded theories, each of which attempts to give us a comprehensive picture of ethics, as such.*

## INTRODUCTION

Like 19th British philosopher Henry Sidgwick, we advocate first seeking common points of agreement, shared values at the level of everyday common sense. Invoking theories that attempt to "get to the bottom of things" can provoke unnecessary disagreement that gets in the way of constructive resolution of ethical problems that do not require agreement at the foundational level of our philosophical or religious thinking. Instead, he argues, we should content ourselves, for the most part, with employing our shared values at the level of everyday, common morality.

Engineering ethics is an emerging area of academic study. As such, it is not surprising that there is some dispute about its appropriate content. A common approach is to include some discussion of standard philosophical theories of ethics (such as utilitarianism) in order to provide a superstructure that can be used to identify and resolve ethical issues in engineering.

However, others object that there is neither time nor need to introduce philosophical theories of ethics in courses in engineering ethics (Davis, 2009). Furthermore, they express concern about whether anyone other than a professional philosopher is qualified to teach even abbreviated forms

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of these theories. Philosophers themselves are accustomed to having an entire course to introduce ethical theories to their students, and, even then, they worry about whether they are able to do justice to the nuances of these theories. It is no wonder that few engineering faculty feel ready to deal with the philosophical challenges they may think teaching engineering ethics entails.

Thus conceived, the challenge of teaching engineering ethics seems quite formidable. However, rather than characterize engineering ethics as a sort of "top-down" application of ethical theories to engineering contexts, we conceive of it as a kind of *practical* ethics. How, if at all, philosophical accounts of ethics might contribute to identifying and resolving ethical issues in engineering remains, then, to be seen. We suggest that it is best to begin in the context of engineering practice, reserving the introduction of ethical theories to those moments, if any, when this might actually be helpful in clarifying and resolving the sorts of ethical problems that arise in engineering.

The study of ethical theory as such need not have any particular practical ends in mind. However, a primary aim of the study of practical ethics in engineering is to help students make good ethical decisions in whatever practical endeavors they may undertake as engineers. In this article, we will discuss a recent debate among three well-known philosophers who have given much careful thought to the question of the relevance of ethical theory to the teaching of practical ethics of this sort. This debate was initiated by C.E. Harris (2009a) in his work "Is Moral Theory Useful in Practical Ethics?" This was followed by a series of critical responses by Michael Davis and Bernard Gert, along with replies by Harris.[1]

In his initial article (2009a), Harris discusses the usefulness of utilitarian and respect for persons' theories in framing ethical issues that arise in engineering practice. Sometimes these theories work in concert in supporting views about what should or should not be done. Sometimes they are in tension, if not outright conflict. Even so, Harris argues, they can help us better understand what is at stake morally. He illustrates this with an example that appears in *Engineering Ethics: Concepts and Cases*, an engineering ethics text we co-authored with Harris, Ray James, and the late Michael Rabins (Harris, 2014). Here is how Harris describes the example in his, "A Reply to Bernard Gert" (Harris, 2011, p. 41):

*In 1993, it was publicly revealed that Germany's Heidelberg University conducted automobile crash tests, using more than 200 corpses, including more than eight children. The public controversy that followed included a statement from a spokesman for the Roman Catholic German Bishop's Conference, who argued that "even the dead possess human dignity." On the other side, advocates for the tests argued that relatives of the deceased had given permission and that the test data could result in the saving of many lives.*

*The public controversy took the form of a contest between those who believed that priority should be given to respecting human dignity (including the derivative dignity that should be ascribed to corpses), and those who believed that the promise of the tests to save lives and thus promote the general good was the most important consideration. Both perspectives are partial and inadequate for appreciating the full dimensions of the case. Thus, in order to appreciate the issue in its full complexity, one must consider both perspectives and take into account the limitations of each.*

So, does this example support Harris's view that ethical theories have a useful place in engineering ethics? To see why Harris believes it does, it will be helpful to consider how he begins his "A Reply to Bernard Gert":

*In teaching ethics, I have found it important to correctly describe a moral problem as it most naturally presents itself to a person in a situation of moral choice. We can call this attempt to cor-*