3

Normative Ethics

Having read this chapter and completed its associated questions, readers should be able to:

- Describe normative judgments, and distinguish them from descriptive judgments;
- Describe norms, values and virtues;
- Describe the four ethical theories: utilitarianism, Kantian theory, virtue ethics, and care ethics;
- Identify the criticisms of the four ethical theories;
- Apply the ethical theories to moral issues in engineering practice;
- Reflect upon how ethical theories may impact on making moral decisions.

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Ethics, Technology, and Engineering: An Introduction, First Edition.
Ibo van de Poel and Lambèr Royakkers.

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3.1 Introduction

Case The Ford Pinto

Figure 3.1 Ford Pinto. Photo: Bettmann Archive/Corbis.

On August 10, 1978, on Highway 33 in the neighborhood of Goshen, Indiana (United States), a tragic accident occurred. A truck rear-ended a five-year-old Ford Pinto carrying three teenagers: sisters Judy and Lynn Ulrich (ages 18 and 16, respectively) and their cousin Donna Ulrich (age 18). The collision caused the gas [petrol] tank to rupture and explode, killing all three teens.

Subsequently an Elkart County grand jury returned a criminal homicide charge against Ford, the first ever against an American company. During the following 20-week trial, the judge advised the jury that Ford should be convicted of reckless homicide if it were shown that the company had engaged in "plain, conscious and unjustifiable disregard of harm that might result (from its actions) and the disregard involved a substantial deviation from acceptable standards of conduct." The key phrase around which the trial hinged was "acceptable standards." Towards the end of the 1960s, Ford Motor Company, one of the world's largest car manufacturers, was gradually losing market share. Ford was losing ground to the smaller and cheaper European cars. In 1968, President Lee Iacocca decided a small cheap car had to be designed quickly. This was to become the Ford Pinto. The decision was made to put it onto the market for less than $2000 in 1970. This was a very competitive price but the time schedule for the car's development was rushed. At the time, car development normally required around 43 months. Only 24 months were reserved for the Ford Pinto. Because the Pinto had to cost a maximum of $2000, a radical design was selected in which styling took precedence over engineering design. The safety aspect of the design did not receive sufficient priority. There was no

experience with small cars within the company at all. Among other things, this led to the positioning of the petrol tank just behind the rear axle. Later it was found that the gear construction in the rear axles (the differential) was situated such that it would puncture the petrol tank in the event of a collision. In Ford's tests of the Pinto prototype, this problem occurred at speeds as low as 35 km per hour. The puncture of the tank caused an extremely hazardous situation. These test results were passed on to the highest management level within Ford. From other tests it was shown that there were two simple ways to considerably reduce the risk that the petrol tank would be ruptured. It was possible to alter the design to allow the petrol tank to be situated above the axle. It was estimated that the change in the design would raise the price of the car by $11. A second option was to protect the tank with a rubber layer, which was probably a cheaper option. However, because the design met the safety requirements of the government, the Pinto was taken into production without any alterations.

To justify its actions, Ford made a cost-benefit analysis. In this cost-benefit analysis, which was published under the heading "Fatalities Associated with Crash-Induced Fuel Leakage and Fires," it was asserted that the extra costs of $11 did not weigh against the benefit that society would derive from a smaller number of wounded passengers and fatalities. This statement was argued as follows:

The societal benefits of the riskier design that costs $11 less was estimated at nearly $50 million: 180 lives lost, 180 wounded and 2100 cars burnt out. The calculation for this was 180 lives × $200,000 + 180 seriously wounded × $67,000 + 2100 burnt out cars × $700 = $49.53 million. This was considered to be the total societal benefit.

Against this there was the cost of improving the cars: 11 million cars and 1.5 million trucks had to be called back and retrofitted against an estimated costs per unit of $11, amounting to a total cost of 137 million dollar (12.5 million × $11). A memorandum attached to the report described the costs and benefits as in Table 3.1.

Table 3.1 Benefits and costs

Benefits		
Savings	*Unit cost (US$)*	*Total (US$)*
180 burn deaths	200 000	36 000 000
180 serious burn injuries	67 000	12 060 000
2,100 burned vehicles	700	1 470 000
Total		*49 530 000*
Costs		
Sales	*Unit cost (US$)*	*Total (US$)*
11 million cars	11 per car	121 000 000
1.5 million light trucks	11 per truck	16 500 000
Total		*137 500 000*

The estimation by Ford of the number of lives lost and wounded incurred was based on statistical data. The estimation Ford made that a human life is worth $200,000 was based on a report of the National Highway Traffic Safety Administration (see Table 3.2).

Table 3.2 Component costs

Component		*1971 costs (US$)*
Future productivity losses	Direct	132 000
	Indirect	41 300
Medical costs	Hospital	700
	Other	425
Property damage		1 500
Insurance administration		4 700
Legal and Court		3 000
Employer losses		1 000
Victim's pain and suffering		10 000
Funeral		900
Assets (lost consumption)		5 000
Miscellaneous accident cost		200
Total per fatality		*200 725*

The conclusion that Ford drew was clear: a technical improvement costing $11 per car which would have prevented gas tanks from rupturing so easily was not cost-effective for society. The $137 million cost of the safer model clearly outweighed the benefits of $49.53 million. Altering the Pinto for $11 a car would cost society ($137 million – $49.53 million) $87.47 million.

On March 13, 1980, the Elkhart County jury found Ford not guilty of criminal homicide. However, under pressure from various institutions, Ford recalled 1.5 million cars for refitting, and this case and many other similar Pinto accidents cost Ford millions of dollars in legal settlements to accident victims. Ford also suffered a great deal of damage to its reputation.

Source: Based on Birch and Fielder (1994).

The argument of Ford is controversial and has evoked a lot of debate. It painfully illustrates that expressing the value of human life in monetary terms involves the danger of neglecting fundamental human rights, such as the right to life. The Ford Pinto case has become one of the most well-known cases in applied ethics, since it raises many questions of ethical importance. Some people conclude that Ford was definitely wrong in designing and marketing the Pinto, and others believe that Ford was neither legally nor morally blameworthy, and acted right in producing the Pinto. Reflecting on this case, several ethical questions emerge: Was Ford acting wrong in rushing the

production of the Pinto? Even though Ford violated no federal safety standards or laws, should the company have made the Pinto safer in terms of rear-end collisions, especially regarding the placement of the gas tank? Was it acceptable that Ford used cost-benefit analysis to make a decision relating to safety, specifically placing dollar values on human life and suffering? Should companies like Ford play a role in setting safety standards? What were the responsibilities of the Ford design engineers and crash-test engineers?

Different arguments can be used to answer these questions. Despite the apparent differences, some recurrent patterns can be found in the moral arguments that are used in cases like this, and the cases we have already seen: the Challenger case (Section 1.2) and the BART case (Section 2.1). These patterns are related to ethical theories that have been developed by various philosophers. Ethical theories help us to sort out our thinking and to develop a coherent and justifiable basis for dealing with moral questions. The role of ethical theories is to provide certain arguments or reasons for a moral judgment. They provide a normative framework for understanding and responding to moral problems, so improving ethical decision-making or, at least, avoiding certain shortcuts, such as neglecting certain relevant features of the problem or just stating an opinion without any justification. In this chapter we shall therefore introduce three of the best-known ethical theories: consequentialism, duty ethics, and virtue ethics. These theories each have their own criteria with which they determine whether an action is right or wrong. Before we go into these three theories we shall discuss what we mean by morality and ethics (Section 3.2) and distinguish between descriptive and normative judgments (Section 3.3). In Section 3.4 we shall look into the points of departure of ethics: values, norms, and virtues. These points of departure often recur in ethical theories. Before we discuss the three most important ethical theories, we shall first consider the two most extreme approaches to ethics: normative relativism and absolutism (Section 3.5). In Section 3.6 we shall indicate how the three best-known ethical theories – consequentialism, duty ethics, and virtue ethics – are related to each other. These three ethical theories will be discussed at length in the sections that follow (Sections 3.7, 3.8 and 3.9). In Section 3.10 we will discuss a relatively recent approach to ethics as an alternative to the familiar moral theories: care ethics. Finally, in Section 3.11, we clarify our position with respect to applied ethics.

3.2 Ethics and Morality

Defining the term ethics is not easy. Ethics has had many meanings over the centuries. The term is derived from the Greek word ethos, which can be translated as "custom" or "morals," but also as "conviction." "Ethica" stood for the science that considered what was good or bad, wise or unwise, about people's deeds. The Romans translated "ethos" into the Latin "mos" (plural "mores"), which is the root of the word "moral." Ethics and moral stem from the same source. Over the centuries "moral" has taken on the meaning of the totality of accepted rules of behavior (of a group or culture). In this text, we will distinguish ethics from morality. The term ethics will be reserved for a further consideration of what is moral.

Ethics is the systematic reflection on what is moral.

Morality is the whole of opinions, decisions, and actions with which people, individually or collectively, express what they think is good or right.

Ethics The systematic reflection on morality.

Morality The totality of opinions, decisions, and actions with which people express, individually or collectively, what they think is good or right.

In this book we define ethics as the systematic reflection on morality. Morality is defined here as the totality of opinions, decisions, and actions with which people express what they think is good or right. This roughly agrees with the often used definition of morality as the totality of norms and values that actually exist in society.

Systematic reflection on morality increases our ability to cope with moral problems, and thus moral problems that are related to technology as well. Ethics, however, is not a manual with answers; it reflects on questions and arguments concerning the moral choices people can make. Ethics is a process of searching for the right kind of morality.

The study of ethics can be both of a descriptive or prescriptive nature. **Descriptive ethics** is involved with the description of the existing morality, including the description of customs and habits, opinions about good and evil, responsible and irresponsible behavior, and acceptable and unacceptable action. It studies the morality found in certain subcultures or during certain periods of history. Prescriptive or **normative ethics** takes matters a step further. Descriptive ethics can discuss the morality of foreign nations or monthly magazines for men without passing judgment. Normative ethics, which is central to this book, moves away from this detachment. By definition normative ethics is not value-free; it judges morality. It considers the following main question: do the norms and values actually used conform to our ideas about how people should behave? Normative ethics does not give an unambiguous answer to this question, but in its moral judgment various arguments are given based on various ethical theories. These ethical theories provide viewpoints from which we can critically discuss moral issues.

Descriptive ethics The branch of ethics that describes existing morality, including customs and habits, opinions about good and evil, responsible and irresponsible behavior, and acceptable and unacceptable action.

Normative ethics The branch of ethics that judges morality and tries to formulate normative recommendations about how to act or live.

3.3 Descriptive and Normative Judgments

One central question in normative ethics is "what is a right opinion, decision, or action?" To answer this question a judgment has to be made about the opinion, decision, or action in question. This is a normative judgment, because it says something about what "correct behavior" or a "right way of living" is. Normative judgments are value judgments but not descriptive judgments. **Descriptive judgments** are related to what is actually the case (the present), what was the

Descriptive judgment A judgment that describes what is actually the case (the present), what was the case (the past), or what will be the case (the future).

case (the past), or what will be the case (the future). Descriptive judgments are true or false. The assertion "the Challenger met all safety standards of the time" is a descriptive judgment: the assertion is true or false. Sometimes the truth of a descriptive statement has not yet been determined because testing is impossible. Take for example the statement "God exists." Science plays an important role in determining the truth of descriptive judgments. A **normative judgment** is a value judgment. Value judgments indicate whether something is good or bad, desirable or undesirable; they often refer to how the world should be instead of how it is. Such kinds of value judgments often refer to moral norms and values. This can give rise to meaningful discussions, which is not the case for judgments of taste, such as "I do not like Brussels sprouts." Examples of moral judgments are "the Challenger should never have been launched," "Engineers should faithfully provide measurements.", and "stealing is bad."

Normative judgment Judgment about whether something is good or bad, desirable or undesirable, right or wrong.

The distinction between descriptive and normative judgments is not always that easy. The statement "taking bribes is not allowed" can be both a normative and a descriptive judgment. If the statement means that the law declares that taking bribes is illegal then it is a descriptive judgment. If however the statement means that bribery should be forbidden, then it is a normative judgment.

3.4 Points of Departure: Values, Norms, and Virtues

Norms, values, and virtues are the points of departure, respectively, for the three primary normative theories that we will discuss in Sections 3.7, 3.8, and 3.9. We shall discuss them in detail below.

3.4.1 Values

Values help us determine which goals or states of affairs are worth striving for. Moral values are related to a good life and a just society. They have to be distinguished from the preferences or interests of individual people. Preferences or interests are matters people feel they should strive for, for themselves. Moral values are lasting convictions or matters that people feel should be strived for in general and not just for themselves to be able to lead a good life or to realize a just society. A typical example of this is the slogan of the French Revolution: "liberté, égalité, fraternité" (freedom, equality and brotherhood). This slogan did not express a personal preference – such as "I want to be rich" – but expressed values that were felt to be of importance for everyone. Other examples of moral values include justice, health, happiness, and charity. Values are not limited to people; companies have them too. They often formulate their most important moral values (core values) in their mission statement (see Section 2.2.2).

Values Lasting convictions or matters that people feel should be strived for in general and not just for themselves to be able to lead a good life or to realize a just society.

A distinction can be made between intrinsic and instrumental values. An **intrinsic value** is an objective in and of itself. An **instrumental value** is a means to realizing an intrinsic value. The value of money for Scrooge McDuck is intrinsic. He values money independently of what you can do with money. For Mother Theresa, however, money was an instrumental value to realize a higher end: helping the poor. A person can consider his work to be both of intrinsic and instrumental value. If work is meant to support the value of becoming rich, it is an instrumental value. If a person has much job satisfaction, then work is an intrinsic value.

Intrinsic value Value in and of itself.

Instrumental value Something that is valuable in as far as it is a means to, or contributes to something else that is intrinsically good or valuable.

Case Biometric Technology and Data Matching at Super Bowl XXXV

A large spectator event like the Super Bowl presents a prime target for terrorists. Fearing the potential for such an attack or other serious criminal incident, law enforcement agencies in Florida turned for help to biometrics: the use of a person's physical characteristics or personal traits for human recognition. At Super Bowl XXXV in January 2001, a biometric system relying on facial recognition was used. This technology scanned the faces of individuals entering the stadium. The digitized facial images were then instantly matched against images in a centralized database of suspected criminals and terrorists. At the time, this practice was criticized by civil-liberty proponents and privacy advocates. In the post-September 11 (2001) world, however, practices that employ technologies such as face-recognition devices have received overwhelming support from the American public.

Source: Based on Tavani (2004).

In the literature on computer ethics, the threat to personal privacy is one of the most debated ethical problems. The distinction between instrumental and intrinsic values suggests two common ways to attempt to justify privacy. The most common justification is that privacy has instrumental value. It offers us protection against harm. For example, if a person is tested HIV+ and this is publicly known, then an employer might be reluctant to hire him and an insurance company might be reluctant to insure him. The justification of privacy, however, would be more secure if we could show that it has intrinsic value. While few authors argue that privacy is only an intrinsic value, others argue that while privacy is instrumental, it is not merely instrumental. For example, computer ethicist Deborah Johnson proposes that we regard privacy as an essential aspect of autonomy (Johnson, 2001). Autonomy is fundamental to what it means to be human, to our values as human beings (see also Section 3.8).

So, privacy is a necessary condition for an intrinsic value: autonomy. Johnson argues that the loss of privacy would therefore be a threat to our most fundamental values. For example, if a person is being watched by constant surveillance, this has an enormous effect on how the person behaves and how he or she sees himself or herself.

3.4.2 Norms

Norms Rules that prescribe what actions are required, permitted, or forbidden.

Norms are rules that prescribe what concrete actions are required, permitted or forbidden. These are rules and agreements about how people are supposed to treat each other. Values are often translated into rules, so that it is clear in everyday life how we should act to achieve certain values.

One example of a value within our traffic system is safety. However, the value alone is not enough to guarantee safety on the road. To this purpose, we need rules of behavior or norms: prescribed actions that indicate what we must do or must not do in a given situation. The value "safety" in a traffic system is mainly specified by the legal norms from the traffic regulations. In the Dutch regulations, for example, we have the rule that drivers coming from the right must always be given way.

Moral norms are indications for responsible action. Next to moral norms there are other kinds of norms, such as legal norms (for example, traffic rules), precepts of decorum (for example. "you should not talk when your mouth is full"), and rules of play (for example, in Ludo you can only place a counter on the playing board once you have thrown a six with the die). Some moral norms, like "Thou shalt not kill" and "Thou shalt not steal," have been turned into laws.

The difference between values and norms can be described as follows. Values are abstract or global ideas or objectives that are strived for through certain types of behavior; it is what people eventually wish to achieve. Norms, however, are the means to realize values. They are concrete, specific rules that limit action. Without an interpretation, the objective cannot be achieved. Take for example the need for traffic regulations to guarantee traffic safety. In addition, norms have no meaning or are ineffective if the underlying value is unclear or is lacking. So one can imagine that the norm "all bicycle bells must be blue" will be largely ignored. The norm has no meaning – there is no underlying value. These differences are summarized in Table 3.3.

Table 3.3 Differences between values and norms

Values	*Norms*
Ends	Means
Global	Specific
Hard to achieve without norms	Ineffective without values

Source: Based on Jeurissen and Van de Ven (2007, p. 57).

3.4.3 Virtues

Next to values and norms we have another moral point of departure: **virtues**. The philosopher Alasdair MacIntyre describes virtues as a certain type of human characteristics or qualities that has the following five features:

Virtues A certain type of human characteristics or qualities.

1 They are desired characteristics and they express a value that is worth striving for.
2 They are expressed in action.
3 They are lasting and permanent – they form a lasting structural foundation for action.
4 They are always present, but are only used when necessary.
5 They can be influenced by the individual (MacIntyre, 1984a).

The last statement suggests that people can learn virtues. It is a matter of the shaping of a person's character or personality. This occurs during our upbringing or our learning process within an organization. Examples of virtues are justice, honesty, courage, loyalty, creativity, and humor.

We can distinguish moral virtues (or character virtues) from intellectual virtues. Intellectual virtues focus on knowledge and skills. Moral virtues are the desirable characteristics of people – the characteristics that make people good.

On the basis of the preceding description of moral virtues, they seem to be similar to values. Many of the characteristics that we qualify as moral virtues are also values, such as integrity and being just. The difference is that the notion of virtue mainly refers to the character development someone has to have gone through to truly realize those values.

Moral virtues are indispensable in a responsible organization. An organization can formulate nice values like integrity, respect, and responsibility as much as it likes, but without the moral virtues being present in the character of its employees little will be accomplished. The values indicate which characteristics (virtues) an organization prizes or expects of its employees – what kind of people it expects its employees to be.

Moral values help us determine which goals or states of affairs are worth striving for in life, to lead a good life or to realize a just society.

Moral norms are rules that prescribe what action is required, permitted, or forbidden.

Moral virtues are character traits that make someone a good person or that allow people to lead good lives.

3.5 Relativism and Absolutism

Before discussing the three most important theories in normative ethics, we shall look at two extreme theories that seem to be very tempting at first when it comes to forming a moral judgment: normative relativism and absolutism.

3.5.1 Normative relativism

Normative relativism An ethical theory that argues that all moral points of view – all values, norms, and virtues – are equally valid.

Normative relativism argues that all moral points of view – all values, norms and virtues – are relative. What is good or responsible for one person is not necessarily so for another. A moral judgment or choice is simply a personal opinion: "If I think it is good (or bad) to do A, then it *is* good (or bad) to do A." So the defense of such a claim is subjective and random: there are no guidelines about behavior that are objective and independent of time, place, and culture. In other words, there are no universal norms according to this theory, that is, norms that are universally applicable and should be respected by all. Furthermore, normative relativism states that the various values and norm systems for each culture are equal, so that it is impossible to say that certain norms and values are better than others. This means that we have to respect all value and norm systems.

There are three problems with this theory. First, it seems to involve an inherent contradiction. The theory states that there are no universal norms, but at the same time it uses a universal norm: "Everybody has to respect the moral opinions of others." Second, it makes any meaningful moral discussion totally impossible, because you can always appeal to your freedom of opinion, which by definition is neither better nor worse than other opinions. The question is whether this is a valid standpoint. Should the torture of political prisoners be tolerated because this is customary within a given culture? Are there no moral limits to such tolerance? Do we not all object to this kind of relativistic argument to defend the torture of political prisoners? Finally, normative relativism can lead to unworkable or intolerable situations. Engineers work in teams or are employed within a company where there are written – and unwritten – rules to promote cooperation (for example, attending meetings on time). A system that allowed engineers to disregard these rules based on his or her personal values (which other people have to respect) would create an unworkable situation.

3.5.2 Absolutism

Universalism An ethical theory that states that there is a system of norms and values that is universally applicable to everyone, independent of time, place, or culture.

Absolutism A rigid form of universalism in which no exceptions to rules are possible.

The other extreme position is *absolutism*: a rigid form of universalism. **Universalism** states that there is a system of norms and values that is universally applicable to everyone, independent of time, place, or culture. **Absolutism** can have a religious nature, where a god determines the universal norms (also known as a dogmatic schema). In many types of universalism room is left to transgress a universal norm in specific exceptional circumstances. In contrast with absolutism, most types of universalism allow for the possibility that not all norms and values are universal. In absolutism a norm like "Thou shalt not kill" would be considered to be universally applicable, but one can imagine situations where killing a person may be the most morally responsible thing to do. Absolutism does not make any exceptions: a rule is a rule.

Absolutism has three main problems. First, we cannot work with the notion that a universal norm prescribes the best action in all situations. Killing someone out of self-defense is justifiable, despite the universal norm "Thou shalt not kill." Second, absolutism gives no answers for conflicting norms. This occurs, for example, in the case of a whistleblower (see Section 1.5.3): on the one hand you have an obligation to maintain confidentiality but on the other you have the obligation to warn society about risks. According to which generally applicable norm should you act? Third, absolutism offers no room for an independent moral judgment, since it often stems from dogmatism. Independent moral judgment was central to the philosophy of the Enlightenment (in the seventeenth and eighteenth centuries). Enlightenment philosophers like Bentham, Mill, and Kant encouraged people to move away from prejudices and dogmatic schemas. The idea was that reason allows man to design his own rules of behavior. Humans, as rational agents, were not supposed to blindly follow traditional moral guidelines, such as the morality dictated by God.

Considering the discussion above, we can state that a choice based only on normative relativism or absolutism is at the very least *ethically* suspect, since ethics reflects on morality, and calls us to make reasoned judgments about it. The ethical theories we shall discuss in the following section are more rational theories than normative relativism or absolutism. Two of them originate from the tradition of philosophy of the Enlightenment.

> Immanuel Kant summarized the essence of Enlightenment as follows: "Enlightenment is man's release from his self-incurred tutelage. Tutelage is man's inability to make use of his understanding without direction from another. Self-incurred is this tutelage when its cause lies not in lack of reason but in lack of resolution and courage to use it without direction from another. *Sapere aude!* 'Have courage to use your own reason!' – that is the motto of enlightenment." (Kant, 1990 [1784])

3.6 Ethical Theories

We will now discuss three primary ethical theories and attempt to synthesize their applications. These three are consequentialism, deontology, and virtue ethics. We can distinguish these theories from each other by their approach to the structure of human action and the primary focus or point of departure they use to theorize ethics (see Table 3.4)

The structure of human action means that an action is carried out by a certain actor (person or institution) with a certain intention, which then leads to certain consequences. So, we can evaluate each moral action from three perspectives: the actor, the action and the consequences.

If we evaluate the action from the perspective of the *action* itself, we make use of deontological ethics or deontology (Greek: δέον *(deon)* meaning *obligation* or *duty*): duty ethics. Here, the point of departure is *norms.* It is your moral obligation to

Table 3.4 Differences between the ethical theories

	Actor	*Action*	*Consequences*
Theory	Virtue ethics	Deontology	Utilitarianism
Points of departure	Virtues	Norms	Values

ensure that your actions agree with an applicable norm (rule or principle). One example of such an applicable norm is the "Golden Rule," which can be found in the texts of various religions: "Do unto others as you would have them do unto you."

If we look at the *actor* and his/her characteristics to pass moral judgment on an action, then we make use of virtue ethics. It is neither the incidental action that counts nor the consequences of the action, but it is the quality of the person acting that makes the action morally right or not. Here, the moral point of departure is *virtues*, which allow people to realize a good life.

If we disregard both the actor and the action in the moral judgment of a certain action, but only consider the consequences, then we apply consequentialism. You ought to choose the action with the best outcomes. The moral point of departure is *values*. Consequentialists focus on realizing certain goals or states of affairs they feel should be strived for, for example, promoting pleasure, avoiding pain, or realizing ambitions.

There are different variants on the ethical theories mentioned above. In the following three sections we shall discuss the best-known variant for each theory: utilitarianism as a representative of consequentialism (Section 3.7), Kant's theory as a representative of duty ethics (Section 3.8), and Aristotle's virtues doctrine as a representative of virtue ethics (Section 3.9)

3.7 Utilitarianism

Consequentalism The class of ethical theories which hold that the consequences of actions are central to the moral judgment of those actions.

Utilitarianism A type of consequentialism based on the utility principle. In utilitarianism, actions are judged by the amount of pleasure and pain they bring about. The action that brings the greatest happiness for the greatest number should be chosen.

In **consequentialism**, the *consequences* of actions are central to the moral judgment of those actions. An action in itself is not right or wrong; it is only the consequence of action that is morally relevant. We shall limit ourselves to one type of consequentialism: **utilitarianism**. Utilitarianism is characterized by the fact that it measures the consequences of actions against one value: human pleasure, happiness, or welfare. Utilitarianism therefore is a monistic type of consequentialism. There are pluralistic types of consequentialism too, where various values must be weighed against each other in the assessment of actions.

3.7.1 Jeremy Bentham

Jeremy Bentham was the founder of *utilitarianism*, a word derived from the Latin *utilis* meaning useful. Utilitarianism makes the consequence of an action central to its moral judgment: an action is right if it is useful and wrong if it is damaging. The next question of course is "useful for what?" In other words, what is the purpose for which the action is a means? This purpose has to be something that has *intrinsic* value. So it has to be good in itself. This means that the utilitarian is primarily concerned with values; he first has a notion of what is intrinsically good and subsequently considers the moral rightness dependent on this notion. The value theory that Bentham connects to his ethics is **hedonism**: the idea that "pleasure" is the only thing that is good in itself and for which all other things are instrumental.

Hedonism The idea that pleasure is the only thing that is good in itself and to which all other things are instrumental.

Jeremy Bentham (1748–1832)

> By the principle of utility is meant that principle which approves or disapproves of every action whatsoever, according to the tendency it appears to have to augment or diminish the happiness of the party whose interest is in question: or, what is the same thing in other words to promote or to oppose that happiness. I say of every action whatsoever, and therefore not only of every action of a private individual, but of every measure of government. (Bentham, 1948 [1789])

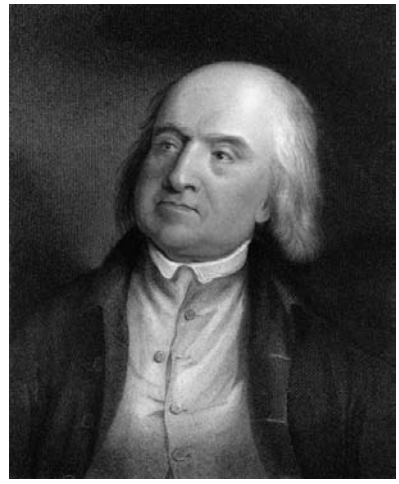

Figure 3.2 Jeremy Bentham. Photo: © Classic Image / Alamy.

Jeremy Bentham was born in London on February 15, 1748. At pre-school age his father taught him Latin, Greek and music. A private teacher also taught him French language and literature. His private teacher had him read Télémaque by Fénelon. The book had a huge impact on Bentham, who identified strongly with the hero Telemachus. His dedication to the welfare of humanity was an ideal he held to throughout his life. When he was 12 he was enrolled at Queen's College in Oxford, where he took classical languages and philosophy. As a small and shy but intelligent child, he soon was given the nickname "the philosopher." Bentham looked back on this period in horror. He considered the lectures in Oxford to be useless and a waste of time – the only things he felt had been useful were lessons on logic. As a student he trained to become a lawyer, but after a few years of running a law practice he focused more and more on developing a philosophical and scientific theory of legislation and justice. He fiercely criticized the legal system, because it did nothing to improve the welfare of people. Courts of law could condemn people for "sexual crimes" even if neither

party had objections to the sexual act. Bentham thought this was nonsense: if both parties agreed to an act then there could be no crime. As an alternative Bentham wanted to build a new legal system that was rational, clear, and consistent. It was to be based on ethical knowledge and not on tradition or custom. His ethical opinions for which he chose the name "utilitarianism" were set out in *An Introduction to the Principles of Morals and Legislation* (1948 [1789]). Due to the clash between his ethical opinion and conventional Christian thought, Bentham was greatly opposed to Christianity, which he considered to be a form of ascetism where pleasure was condemned. According to him, Christianity was a major obstacle to human happiness and a hindrance in the realization of utilitarianism.

Bentham was one of the earliest philosophers to argue for a complete equality between sexes, and for decriminalization of homosexuality and equal rights for homosexually inclined people. Furthermore, he is widely recognized as one of the earliest proponents of animal rights. Bentham argued that the ability to suffer, not the ability to reason, must be the benchmark of how to treat other beings. If the ability to reason were the criterion, many human beings, including babies and disabled people, would also have to be treated as though they were things.

Figure 3.3 Panopticon. Photo: Bettmann Archive/Corbis..

Bentham is probably best known in popular society for his design of the "panopticon" (which means all-seeing): it is a dome-shaped prison in which a

prison warder can see all prisoners. They are kept in cell rings with windows facing inwards (Figure 3.3). The warder can observe all prisoners, but the prisoners cannot see the warder. The idea behind this is simple: if individuals are checked by an all-seeing eye (without the eye being seen), they will allow themselves to be disciplined and be controllable. The panopticon remained an obsession of Bentham's for more than 20 years.

Bentham died on June 6, 1832 in the town he was born aged 85. The real body of Bentham together with a wax head (something went wrong preserving the head) can still be admired in the University College of London in a cabinet with a glass door. During board meetings of the university, he is removed from the cabinet so that he can attend these meetings. Bentham left his fortune to the university with the condition that he would be allowed to attend all meetings of the board.

Bentham calls pleasure and pain the sovereign masters of man. That which provides pleasure or avoids pain is good, and that which provides pain or reduces pleasure is bad. Bentham places experience at the heart of his ethics. According to him, it is an elementary fact of experience that people strive by nature for pleasure and avoid pain. Moreover, people know what provides pleasure and what results in pain, and also how pleasure can be realized. Based on this experience people can form a moral judgment without the intervention of an authority such as a legislator or God.

The only moral criterion for good and bad lies in what Bentham calls the **utility principle**: the greatest happiness for the greatest number (of the members of the community). This principle is the only and sufficient ground for any action – both for individuals and collectives (e.g., companies or government). It gives us a reason to act morally. Moral terms like "proper," "responsible," and "correct" only are meaningful if they are used for actions that are in agreement with the utility principle. The greatest happiness can be determined quantitatively according to Bentham. He believed that we can calculate the expected pleasure or pain and can even indicate quite accurately how much will be produced by a given action. Here, pleasure and pain are given in terms of a measurable result, which can be made suitable for calculation. In this context he referred to a **moral balance sheet** and even drew up extensive tables. He made use of a number of circumstances, such as intensity, duration, certainty and extent of an action (see box). Applying this theory to a moral problem means drawing up a moral balance sheet. Here, the costs and benefits for each possible action must be weighed against each other. The action with the best result (providing the most utility) is the one to be preferred. According to Bentham, money can even be used to express quantities of pleasure or pain, because these experiences can (almost) always be bought and sold.

Utility principle The principle that one should choose those actions that result in the greatest happiness for the greatest number.

Moral balance sheet A balance sheet in which the costs and benefits (pleasures and pains) for each possible action are weighed against each other. Bentham proposed the drawing up of such balance sheets to determine the utility of actions. Cost-benefit analysis is a more modern variety of such balance sheets.

Value of a Lot of Pleasure or Pain, How to be Measured

Pleasures then, and the avoidance of pains, are the *ends* that the legislator has in view; it behoves him therefore to understand their *value*. Pleasures and pains are the instruments he has to work with: it behoves him therefore to understand their force, which is again, in other words, their value. To a person considered by *himself*, the value of a pleasure or pain considered *by itself*, will be greater or less, according to the four following circumstances:

- its *intensity*;
- its *duration*;
- its *certainty* or *uncertainty*; and.
- its *propinquity* or *remoteness*.

These are the circumstances which are to be considered in estimating a pleasure or a pain considered each of them by itself. But when the value of any pleasure or pain is considered for the purpose of estimating the tendency of any *act* by which it is produced, there are two other circumstances to be taken into the account; these are,

- Its *fecundity*, or the chance it has of being followed by sensations of the *same* kind: that is, pleasures, if it be a pleasure: pains, if it be a pain.
- Its *purity*, or the chance it has of not being followed by sensations of the *opposite* kind: that is, pains, if it be a pleasure: pleasures, if it be a pain.

These two last, however, are in strictness scarcely to be deemed properties of the pleasure or the pain itself; they are not, therefore, in strictness to be taken into the account of the value of that pleasure or that pain. (…) And one other; to wit:

- Its *extent*; that is, the number of persons to whom it *extends*; or (in other words) who are affected by it.

To take an exact account then of the general tendency of any act, by which the interests of a community are affected, proceed as follows. Begin with any one person of those whose interests seem most immediately to be affected by it: and take an account,

1 Of the value of each distinguishable *pleasure* which appears to be produced by it in the *first* instance.
2 Of the value of each *pain* which appears to be produced by it in the *first* instance.
3 Of the value of each pleasure which appears to be produced by it *after* the first. This constitutes the *fecundity* of the first *pleasure* and the *impurity* of the first *pain*.

4 Of the value of each *pain* which appears to be produced by it after the first. This constitutes the *fecundity* of the first *pain*, and the *impurity* of the first pleasure.
5 Sum up all the values of all the *pleasures* on the one side, and those of all the pains on the other. The balance, if it be on the side of pleasure, will give the *good* tendency of the act upon the whole, with respect to the interests of that *individual* person; if on the side of pain, the *bad* tendency of it upon the whole.
6 Take an account of the *number* of persons whose interests appear to be concerned; and repeat the above process with respect to each. *Sum up* the numbers expressive of the degrees of *good* tendency, which the act has, with respect to each individual, in regard to whom the tendency of it is *good* upon the whole: do this again with respect to each individual, in regard to whom the tendency of it is *good* upon the whole: do this again with respect to each individual, in regard to whom the tendency of it is *bad* upon the whole. Take the *balance* which if on the side of *pleasure*, will give the general *good tendency* of the act, with respect to the total number or community of individuals concerned; if on the side of pain, the general *evil tendency*, with respect to the same community.

It is not to be expected that this process should be strictly pursued previously to every moral judgment, or to every legislative or judicial operation. It may, however, be always kept in view: and as near as the process actually pursued on these occasions approaches to it, so near will such process approach to the character of an exact one." (Bentham, 1948 [1789])

The idea behind the calculation above is quite simple: an action is morally right if it results in pleasure, and it is morally wrong is it gives rise to pain. To find out which action leads to the most happiness for the greatest number of people, we need to count the pleasure and pain of all individuals. This is no simple matter, because pleasure cannot be measured objectively. First, the pleasure of different people cannot be compared; pleasure is a rather subjective term. A person can enjoy a composition by Mozart, while someone else experiences this quite differently. Second, it is not easy to compare actions: is reading a good book worth more than eating an ice cream? While applying this hedonistic calculus this will often lead to problems, because it is not clear how much pleasure a given experience produces for each person. How much pleasure do social contacts, our health, or our privacy give us? Since this is not clear, making moral judgments about human actions becomes hard. Take, for example, a company that pollutes the environment. If the company were to work in a more environmentally friendly way this would reduce the profits and the numbers of people employed. However, if the company does not become environmentally friendly then the damage to the environment will have repercussions for public health. It seems nearly impossible to draw up a quantitative moral balance sheet for these two options: continuing along the status quo or changing to environmentally friendly production.

3.7.2 Mill and the freedom principle

John Stuart Mill (1806–1873) extended and revised Bentham's thinking. There are two main respects in which Mill's thinking differs from that of his predecessor. According to Mill, qualities must be taken into account when applying the utilitarian calculus: forms of pleasure can be qualitatively compared, in which it is possible that a quantitatively smaller pleasure is preferred over a quantitatively larger one because the former pleasure is by nature more valuable than the latter. According to Mill, "[i]t is better to be a human being dissatisfied than a pig satisfied; better to be Socrates dissatisfied than a fool satisfied" (Mill, 1979 [1863]). Unfortunately, Mill does not answer the question what makes one pleasure more valuable than another. He only gives indications: "higher" desires, like intellectual ones, are to be preferred above "lower" desires, like physical or animal desires. Satisfying the desire to complete a study is more rewarding than watching "As the World Turns" every evening or to be able to eat as much as you want at every meal. The second distinction was a response to the criticism that the position of individuals cannot always be protected if the calculation indicates that the pleasure of the majority outweighs the unhappiness of a few individuals. This could result in the exploitation and abuse of minorities, because Bentham's utilitarianism does not say anything about the division of pleasure and pain among people. According to Mill we must choose the action that provides the most pleasure but does not conflict with human nature and dignity. For the latter point he introduces the **freedom principle**: everyone is free to strive for his/her own pleasure, as long as they do not deny or hinder the pleasure of others. Mill illustrates this principle using the example of drunkenness. The right to interfere with someone who is drunk only arises when the person who is drunk starts to do harm to others. Mill's principle also provides a foundation for the discussion nowadays about legalizing soft drugs (or even heroin). According to Mill, the sale and use of soft drugs should not be a matter for penal law, as this would be a violation of freedom. The fact using soft drugs is bad for your health cannot be a consideration for the legislator to intervene, because the legislator has no right to be involved with personal decisions in Mill's view. Mill illustrates this principle on the basis of drunkenness.

Freedom principle The moral principle that everyone is free to strive for his/her own pleasure, as long as they do not deny or hinder the pleasure of others.

> Drunkenness, for example, in ordinary cases, is not a fit subject for legislative interference; but I should deem it perfectly legitimate that a person, who had once been convicted of any act of violence to others under the influence of drink, should be placed under a special legal restriction, personal to himself; that if he were afterwards found drunk, he should be liable to a penalty, and that if when in that state he committed another offence, the punishment to which he would be liable for that other offence should be increased in severity. (Mill, 1859, chapter 5)

The freedom principle is also known as the **no harm principle**: "one is free to do what one wishes, but only to the extent that no harm is done to others." However, the principle can hardly ever be applied in full, since any moral problem involves possible harm to others, or at least the risk of harm.

No harm principle The principle that one is free to do what one wishes, as long as no harm is done to others. Also known as the freedom principle.

John Stuart Mill (1806–1873)

> The only freedom which deserves the name, is that of pursuing our own good in our own way, so long as we do not attempt to deprive others of theirs, or impede their efforts to obtain it. Each is the proper guardian of his own health, whether bodily, or mental and spiritual. Mankind are greater gainers by suffering each other to live as seems good to themselves, than by compelling each to live as seems good to the rest. (Mill, 1859)

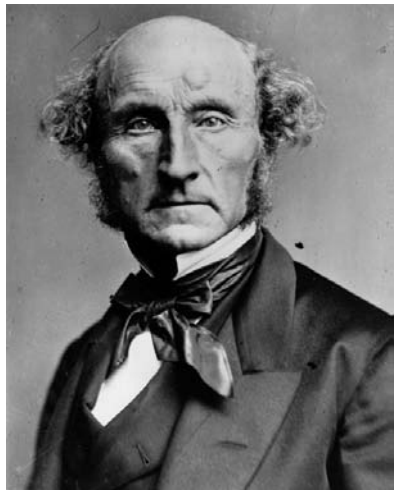

Figure 3.4 John Stuart Mill. Photo: Hulton Archive/Getty Images.

John Stuart Mill was born in 1806; he was the oldest son of James Mill and proved to be a prodigy. James Mill had special ideas about raising children. At the age of three he taught his son Greek, at age four he taught him Latin, and shortly after he taught him mathematics. At age twelve John Stuart Mill wrote a book about Roman history. Mill was a proponent of utilitarianism as proposed by his godfather Jeremy Bentham. When he was 18, Mill founded a utilitarian society for youths, where lectures and discussions were held about the utility principle. When he was 20, Mill had a nervous breakdown and he suffered from severe depressions. He found that the utilitarianism of Bentham was not making him happy. Following this, he distanced himself from Bentham's ideas.

In 1823 he started to work for the East India Company under his father's authority. This work provided him with much opportunity to study and write. In 1830 he met the 23 year-old Harriet Taylor. They were highly impressed by each other. However, Harriet was married to the businessman John Taylor and she decided not to sacrifice her family because of her feelings. Her husband eventually allowed her to meet with Mill on a regular basis. According to Mill's testimony their love for each other was purely platonic. After John Taylor's death in 1849 there was no more reason not to marry, which they did in 1851. In Mill's view, Harriet's opinions had a major influence on him and especially

his socio-philosophical work. Together with her, Mill called for the emancipation of women and also argued for women's right to vote. In 1869 he published *The Subjection of Women*, which is now the classical theoretical statement of the case for woman suffrage. Harriet died in 1858 in Avignon. Between 1866 and 1868, Mill was a Member of Parliament. He was considered a radical, because he supported the public ownership of natural resources, the development of labor organizations, compulsory education, birth control, an end to slavery, and equality of women. His advocacy of women's suffrage in the Reform Bill of 1867 led to the creation of the suffrage movement. He died in 1873.

John Stuart Mill was the most influential British thinker of the nineteenth century. Mill's essay *On Liberty* (1859) remains his major contribution to political thought. He proposed that self-protection is the only reason an individual or the government can interfere with a person's liberty of action. Outside of preventing harm to others, the state has no legitimate reason to compel a person to act in the way the government wishes.

3.7.3 Criticism of utilitarianism

Although utilitarianism has a strong intuitive attraction because of its simplicity, it has nevertheless received much criticism. Two important points of criticism were discussed above: happiness cannot be measured objectively and utilitarianism can lead to exploitation. Four other points of criticism are discussed below. In many cases the criticism was incorporated by utilitarians to improve utilitarianism.

The first criticism is that the consequences cannot be foreseen objectively and often are unpredictable, unknown, or uncertain. An obvious solution is to work with expected consequences and the accompanying pleasure. In the twentieth century this notion was even given a mathematical foundation using statistics.

Distributive justice The value of having a just distribution of certain important goods, like income, happiness, and career.

Next to this there is the problem of **distributive justice**. Distributive justice refers to the value of having a just distribution of certain important goods, like income, happiness, and career. Utilitarianism can lead to an unjust division of costs and benefits. According to the political philosopher John Rawls utilitarianism suffers from this problem because it does not recognize the fundamental separateness of persons (Rawls, 1971). Instead of that utilitarianism treats society as a whole in which pleasure must be increased via the criterion "the greatest happiness for the greatest number." The question concerning the distribution of happiness is neglected, even under Mill's formulation of utilitarianism. It is a tricky question because numerous issues in technology are concerned with this problem, such as how the risks and benefits of technology should be justly distributed (see Chapter 8). Despite Rawls criticism, utilitarians have tried different ways to pay attention to justice and the distribution of welfare. Henry Sidgwick, for example, believed that although the total amount of societal happiness should be considered in the first

place, it should be the situation with the most equitable distribution of happiness that must be selected from various situations with equal happiness (Sidgwick, 1877). Other utilitarians argue that the classical utilitarianism – with the emphasis on the greatest happiness for the greatest number of people – does not require such a clause, because it leads to a just and balanced distribution of welfare. The modern utilitarian Richard Hare mentions two reasons for this. First, a rich person experiences less added pleasure on average from an increase in income of 100 Euros than a poor person. This phenomenon is known in economics as decreasing **marginal utility** (the term marginal utility refers to the increase in utility with an increase in income for example). An improvement in income for poor people will sooner lead to maximization of happiness than an increase in income for people who already are rich. Second, inequality of income leads to jealousy and thus to pain and is thus to be avoided (Hare, 1982).

Marginal utility The additional utility that is generated by an increase in a good or service (income for example).

A third point of criticism is that utilitarianism ignores the personal relationships between people. In the hedonistic balance of Bentham each individual counts as an anonymous unit. Who receives the pleasure is irrelevant; it is only to total amount of pleasure that counts. In other words, the total happiness counts and not the individual happiness of specific persons. For this reason Mill called Bentham's followers reasoning machines. In daily life, some people's happiness has a greater impact on us than the happiness of others. If you were to be shipwrecked and had to make a choice between saving a friend or a famous surgeon, utilitarian theory dictates that saving the surgeon is the right thing to do, because he is more useful to society. This choice ignores the fact that it is *specific individuals* that want to be happy and that it really depends on *who* is made happier. The question, therefore, is whether we have special moral obligations to the people that we have a personal relationship with, and whom we want to make happy.

Finally, certain actions are morally acceptable even though they do not create pleasure and some actions that maximize pleasure are morally unacceptable. In the next section we will see that Kant always considers lying to be morally wrong, even if it results in more or maximal pleasure in certain situations. According to utilitarianism, even the most fundamental rules, such as the human rights formulated in the Universal Declaration of Human Rights (1948), can be broken if the positive consequences are greater than the negative ones: "the end justifies the means." On utilitarian grounds, an engineer could be asked to bend a fundamental rule of professional conduct because of the positive consequence it would have. Say, for example, that an engineer is asked to falsify the measurements he gave in a report by the party commissioning the work, because the correct measurement results would have major negative consequences, such as the payment of damages or bankruptcy. According to the traditional utilitarian view, this behavior would be justified in a certain situation. This traditional view is known as **act utilitarianism** because it judges the consequences of individual acts. A solution to this problem is proposed by one variant of

Act utilitarianism The traditional approach to utilitarianism in which the rightness of actions is judged by the (expected) consequences of those actions.

Rule utilitarianism A variant of utilitarianism that judges actions by judging the consequences of the rules on which these actions are based. These rules, rather than the actions themselves, should maximize utility.

utilitarianism: **rule utilitarianism**. Rule utilitarianism recognizes the existence of moral rules, if only because life would be very complicated without them. For each situation we would have to judge whether it was morally correct or not, because each situation is slightly different from another. Rule utilitarianism looks at the consequences of rules (in contrast with actions) to increase happiness. Though the falsifying of measurements may increase societal utility in a specific situation, a rule utilitarian will not allow it because the rule "measurement data should be presented correctly" generally promotes happiness within society. If such a rule withstands the test of promoting happiness then it is turned into a moral rule. Within rule utilitarianism there are a number of variants. There is a variant where the moral rules are viewed as conditional rules (they are more like rules of thumb), and a variant that views the rules as unconditional ones (they apply to all people in all circumstances without exception). Rule utilitarianism is close to duty ethics, which is the subject of the next section, although their conceptual foundations are very different.

3.7.4 Applying utilitarianism to the Ford Pinto case

In the Ford Pinto case the Ford company provided an act-utilitarian argument by making a cost-benefit analysis to justify that the defective vehicle model was not recalled and retrofitted by Ford. This cost-benefit analysis, according to Ford showed that the total social costs of retrofitting all the cars were higher than the social costs of the expected accidents. It is important to note that the cost-benefit analysis refers to social cost rather than to costs for Ford. For this reason, Ford's argument was utilitarian rather than egoistic.

The Ford Pinto case clearly illustrates some of the objections against utilitarianism. First, the amounts of money that Ford attached to different kinds of pain (dead, injuries) seem rather arbitrary, even if some of the amounts were based on government documents. Second, one might wonder how reliable the estimates of, for example, number of fatalities are. A change in these estimates may change the conclusion of the cost-benefit analysis. Apart from such more practical objections, the case also illustrates some of the more fundamental objections to utilitarianism. In making a decision solely based on considerations of overall welfare or happiness, Ford adopted a policy of allowing a certain number of people to die or be injured even though they could have prevented it. One could also argue that the Ford Pinto case reveals exploitation or abuse because the victims were sacrificed to optimize overall welfare (the ends justify the means). Moreover, the case shows how a utilitarian argument may lead to abandoning inherent principles, like "you cannot put a value on human life" or the freedom principle of Mill. According to the latter principle, Ford should have recalled and repaired the car.

Some of these objections might be overcome by applying rule utilitarianism to the case. Then, one should ask whether or not following rules like "companies must recall a car if it is unsafe" or "companies should produce safe cars" maximizes overall

happiness. Since this seems to be the case, Ford was ethically obliged to recall the car, because this is required by rules from which everyone in the society would benefit most in the long run. So, in the case of rule utilitarianism, the fact that an action maximizes utility on a *particular* occasion does not show that it is right from an ethical point of view.

3.8 Kantian Theory

According to **duty ethics** (also known as deontological ethics), an action is morally right if it is in agreement with a moral rule (law, norm, or principle) that is applicable in itself, independent of the consequences of that action. There are two important points of difference between the various duty ethics theories. First, some theories rely on one main principle from which all moral norms can be derived (monistic duty ethics). Other theories, the pluralistic theories, are based on several principles that apply as norms for moral action. A second important difference concerns the foundation or origin of the moral rules. These rules can be given by God, such as in the Bible or the Koran, or they make an appeal to a social contract that the involved parties have implicitly agreed to (e.g., a company code), or they are based on reasonable arguments.

Duty ethics Also known as deontological ethics. The class of approaches in ethics in which an action is considered morally right if it is in agreement with a certain moral rule (law, norm, or principle).

The best-known system of duty ethics has been developed by Immanuel Kant. Since Aristotle, the basis for ethics had been sought in striving for happiness or welfare (e.g., Bentham and Mill). According to Kant, moral laws or normative ethics cannot be based on happiness. Happiness is an individual matter and changes for each person during his/her lifetime. Moreover, it is hard to determine what increases happiness, so striving for happiness can even lead to immorality. Thus, Kant argued that duty was a better guide for ethics.

A core notion in Kantian ethics is *autonomy*. In Kant's opinion man *himself* should be able to determine what is morally correct through reasoning. This should be possible independent of external norms, such as religious norms. The idea behind this is that we should place a moral norm upon ourselves and should obey it: it is our *duty*. We should obey this norm out of a *sense of duty* – out of respect for the moral norm. It is only then that we are acting with **good will**. According to Kant, we can speak of good will if our actions are led by the moral norm. Thus, the notion of good will is different from having good intentions.

Good will A central notion in Kantian ethics. According to Kant, we can speak of good will if our actions are led by the categorical imperative. Kant believes that the good will is the only thing that is unconditionally good.

Since a moral norm has validity independent of time and place, it means that a moral norm is unconditionally applicable (or categorically applicable) to everyone in all circumstances in Kant's view. Often a norm follows the form of "thou shalt …," such as "thou shalt not kill," or "thou shalt not lie." In contrast to a categorical norm, a hypothetical (conditional)

Hypothetical norm A condition norm, that is, a norm which only applies under certain circumstances, usually of the form "If you want X do Y."

norm only applies under certain circumstances. A **hypothetical norm** usually has the following shape: "if you wish to achieve this goal, then you will have to act in this way." An example of such a norm is "if you do not wish to betray your friend, then you may not lie," in which the rule of behavior ("you may not lie") is not unconditional but can only be applied under certain conditions ("you do not wish to betray your friend").

3.8.1 Categorical imperative

According to Kant there is one universal principle from which all moral norms can be derived, which makes his ethics a monistic duty ethics. This principle, which is the foundation of all moral judgments in Kant's view, is referred to as the **categorical imperative**. An imperative is a prescribed action or an obligatory rule. By arguing reasonably, any rational person should be capable of judging whether an optional action is morally right. The categorical imperative was formulated by Kant in different ways.

Categorical imperative A universal principle of the form "Do A" which is the foundation of all moral judgments in Kant's view.

Universality principle First formulation of the categorical imperative: Act only on that maxim which you can at the same time will that it should become a universal law.

The first formulation of the categorical imperative, the **universality principle**, is as follows:

"Act only on that maxim which you can at the same time will that it should become a universal law."

A maxim is a practical principle or proposition that prescribes some action. Kant states that the maxim should be unconditionally good, and should be able to serve as a general law for everyone without this giving rise to contradiction. We must oblige ourselves to follow generally applicable laws. Perhaps a woman decides to recycle her bottles and cans to help the environment. She should ask herself whether the maxim or rule behind her action – that one should recycle containers to help the environment – could be applied to all people. In this case, there is no apparent problem. She could consistently wish that everyone follow the rule or maxim behind her action. However, when you break a promise this is different. Sometimes people are in a situation where it would be more convenient to break a promise. Say that one wonders whether it is morally acceptable to break one's promise. The maxim of the action to be undertaken is "I may break my promises when doing so is convenient for me." The categorical imperative states that it is morally acceptable if I can wish everyone to break their promise without *contradiction*. Breaking a promise is only possible if people trust in the custom of making (and keeping) promises. If breaking a promise when convenient becomes a general law, no one would trust anybody to keep a promise. The contradiction now is that you cannot wish to break a promise and want the breaking of promises to become a general law. If the latter were to become true then promises would lose their meaning and it would be no use to make a promise.

According to Kant, the categorical imperative also implies a postulate of equal and universal human worth. His reflections on autonomy and self-legislation lead him to argue that the free will of all rational beings is the fundamental ground of human rights. The **equality postulate** is defined as the prescription to treat persons as equals, that is, with equal concern and respect (Dworkin, 1977, p. 370). To recognize that human beings are all equal does not mean having to treat them identically in any respects other than those in which they clearly have a moral claim to be treated alike. Opinions diverge concerning the question what these claims amount to and how they have to be balanced with competing claims (based on, for example, the principle of freedom). For example, how should goods be distributed if we set out to treat people as equals?

Equality postulate The prescription to treat persons as equals, that is, with equal concern and respect.

The second formulation of the categorical imperative is, according to Kant, equivalent to the first.

> The second formulation of the categorical imperative, the **reciprocity principle**, is as follows:
>
> "Act as to treat humanity, whether in your own person or in that of any other, in every case as an end, never as means only."

Reciprocity principle Second formulation of the categorical imperative: Act as to treat humanity, whether in your own person or in that of any other, in every case as an end, never as means only.

Humanity in this version of the imperative is presented as equivalent to "reason" or "rationality," for humans differ from things without reason (objects and animals) because humans can think. This imperative states that each human must have respect for the rationality of another and that we must not misguide the rationality of another. In other words, Kant here stresses the rational nature of humans as free, intelligent, self-directing beings. In saying they must never be treated as a means only, he means that we must not merely "use" them as means to our selfish ends. They are not objects or instruments to be used. To use people is to disrespect their humanity. Say I borrow money from someone and promise to pay him back although I know that I will not do so. In this case, I am using the person I made a promise to as a means and not as a goal. I am misleading him, or I am misleading his rationality. I have provided insufficient information about the fact that I will not keep my promise, so that he cannot make a rational choice. Probably he would not have lent me money if he had known that I did not intend to pay him back. I use his rationality as a means to achieve my own aim. The reciprocity principle is strongly anti-paternalistic by nature (on paternalism see Chapter 1), since, a person – as a rational being – should have the right to make up her or his own mind.

The reciprocity principle tells us that we should respect people *as* people, and not "use" them. However, we need to be careful in interpreting the idea of using people, or treating people merely as a means. The difference between treating someone as a means versus treating someone as a *mere* means is not always clear-cut. Suppose someone has religious objections to taking medication (a Christian Scientist, for example),

and yet the doctor forces the person to be medicated for the person's own good. Now the doctor is treating the patient as a mere means to the patient's own welfare – paradoxical as it might sound – and that is unacceptable, according to the reciprocity principle. Note that to treat someone as an end does not simply mean doing what he or she wants. If a consumer argues about the purchase price of a car, and the salesman does not want to bargain about the price, this does not mean that the salesman treats the consumer not as an end. If the salesman informs the consumer about the price of the car and the condition of the car, the salesman treats the consumer as an end.

Immanuel Kant (1724–1804)

> Nothing can possibly be conceived in the world, or even out of it, which can be called good, without qualification, except a good will. Intelligence, wit, judgement, and the other talents of the mind, however they may be named, or courage, resolution, perseverance, as qualities of temperament, are undoubtedly good and desirable in many respects; but these gifts of nature may also become extremely bad and mischievous if the will which is to make use of them, and which, therefore, constitutes what is called character, is not good. (Kant, 2002 [1785])

Figure 3.5 Immanuel Kant. Photo: © INTERFOTO/Alamy.

Immanuel Kant, one of the most influential philosophers in history, was the fourth of nine children born to a poor saddle maker. He was born in 1724 in the university city of Koningsbergen in East Prussia, which was a rich trading place at the time. He was brought up in a tradition of devout Christianity that he strongly rejected in later life. After completing pre-university education he first studied theology and then philosophy, mathematics, and physics in Koningsbergen. After completing his studies in 1746, he became a teacher for various families. From 1755, when he attained the title of Magister, he became a private teacher at the University of Koningsbergen. At 46 he accepted a professorship in logic and metaphysics. He had great admiration for the enlightened king Frederick the Great of Prussia, but in 1794 he came into conflict with the King's successor due to his theological philosophy. He valiantly defended the right of scientists to think in freedom and to publish for fellow scholars. Kant died at the age of 80 (1804). His life was known to be highly disciplined – he had a great fervor for work and a strict daily routine. The inhabitants of Koningsbergen could set the clock by the time, when Kant passed by for his daily walk. The reason for this way of life was his poor physical health, which he tried to improve through his strict routine.

Kant's theory of mind represents a turning point in the history of philosophy, since it radically revised the way that we all think about human knowledge of the world. He built his systematic theoretical philosophy around the idea that the world as we experience it does not exist independently of us. Our own minds are responsible for its form and structure. This introduced the human mind as an active originator of experience rather than just a passive recipient of perception. As Kant puts it, it is the representation that makes the object possible rather than the object that makes the representation possible. This idea, in his words, effected a Copernican revolution. Before Nicolaus Copernicus (1473–1543) – the founder of modern astronomy – astronomical data were explained by assuming that the sun revolves around the earth. Reversing this, Copernicus explained the data by taking the earth to revolve around the sun. In moral philosophy, Kant proposed an equally revolutionary idea. In morality we are not required to obey laws imposed by God or eternal moral principles; instead we must understand morality as resting on a law that springs from our own practical rationality. Kant's ethics, which he expounded in the *Critique of Practical Reason* (1788) and the earlier *Groundwork of the Metaphysics of Morals* (1785), was based on the principle known as the "categorical imperative," an unconditional obligation derived from the concept of duty.

3.8.2 Criticism of Kantian theory

There are two primary criticisms of Kantian theory. According to Kant all moral laws can be derived from the categorical imperative. The question arises whether all these laws form an unambiguous and consistent system of norms. Often there are several contradictory norms, as we saw earlier in the case of the whistle-blower. Another example is the situation in which one can only save one's friend from an emergency situation by lying. It means breaking a norm: either you break the norm that you must always speak the truth or you break the norm about helping people when they need it. In Kant's theory there is no such thing as bending a rule. Kant does not allow for any exceptions in his theory.

To cope with this problem, William David Ross developed a pluralistic theory of moral obligations (Ross, 1930). Ross states that good is often situated on two levels: what seems to be good at first and that which is good once we take everything into consideration. The norms of the first level are called **prima facie norms** and those of the second level are called *self-evident norms* ("duties sans phrase"). Usually, the *prima facie* norms are our self-evident norms, but this is not necessarily the case. An example can illustrate this. Say you promise your students that you will check their work by the end of next week. Later on, a good friend of yours gets into trouble and needs aid. The fact that you have promised to check the work does

Prima facie norms Prima facie norms are the applicable norms, unless they are overruled by other more important norms that become evident when we take everything into consideration.

not disappear. Both norms are prima facie norms, but upon closer inspection only the norm "you must help your friend" is a self-evident norm while the one ("you must keep your promise") is not.

Note that here too we have to weigh the different norms: the norm to keep one's promise and the norm to help a friend. We are never certain that the norm we identify as the self-evident one truly is the self-evident norm. How we should weigh the norms remains unclear here too. Ross states that our choices are never more than considered judgments. Though this is perhaps not very satisfactory, it does pay respect to the complexity of our moral world. Examples of regular *prima facie* norms that are common in duty ethics include the following:

- Norms concerning faithfulness: freely given promises should be kept.
- Norms concerning reciprocity: this can refer to things like the Golden Rule in a positive or a negative sense (treat others as you would like to be treated/do not treat others as you would not like to be treated yourself).
- Norms of solidarity: help people in need regardless of their achievements or usefulness to society or to you as an individual.

second problem is that duty ethics, and thus Kantian theory, often elicits the objection that a rigid adherence to moral rules can make people blind to the potentially very negative consequences of their actions, as becomes clear in the child labor case.

Case Child Labor

The Socialist Party (SP) in the Netherlands started to boycott IKEA in 1998 and demanded that IKEA guarantee that children would never be involved with the production of IKEA products. According to some advocates for child workers, however, such as Theo Knippenberg from ChildRight Worldwide, such boycotts can actually harm the children in question, if their families have no other means of survival (Knippenberg, 1999). Knippenberg has found that many actions taken against child labor in the past have ended up doing more harm than good, because they take away a relatively good opportunity for children to provide themselves a living. As a result of losing a job, many of these children end up in slavery or prostitution. Moreover, trade and industry can contribute to the improvement of the working conditions of the children, such as working times, medical care, training, etc.

This case demonstrates, on the one hand, the value of adhering to a strict moral principle: that child labor should not be condoned. The SP believes in the moral force of this principle, regardless of the consequences, as is also witnessed in Kantian theory. On the other hand, utilitarians emphasize the negative consequences of such strict adherence to principle. According to Knippenberg, breaching the principle counts for nothing in the face of the consequences of abolishing child labor. As this example shows, both theories generally appeal to our moral intuitions, but they can become diametrically

opposed concerning the moral correctness of an action. Ross' approach could offer a solution to the rigidity of Kantian theory. According to Ross the reason why a norm is a self-evident norm depends on the situation in which one finds oneself. We must do what is more of a duty in a given situation. The *prima facie norm* "child labor is not permitted" is not a self-evident norm in this situation, because the situation calls for us to provide a good future for the children and prevent them from becoming slaves or prostitutes. The norm "children should not be forced into slavery or prostitution" would be the self-evident norm instead of "child labor is not permitted."

3.8.3 Applying Kant's theory to the Ford Pinto case

To apply Kant's first categorical imperative, the universality principle, to the Ford Pinto case, we must examine whether the maxim of Ford: "Ford will market the Ford Pinto, knowing that the car is unsafe and without informing the consumers" can be universalized. To do this we have to explain whether this maxim can become a universal law, and can be willed without contradiction. The universal law would read as follows: "Marketing unsafe cars without informing the consumers is allowable." If this were to be a universal law marketing a car would become impossible because no rational person would buy a car anymore, because he or she could not trust that the car would be safe. It may be clear then that the maxim cannot be universalized and should, therefore, not be followed by Ford.

The second categorical imperative, the reciprocity principle, tells us that people should not be treated as mere means. As we have seen this principle implies respect for people's **moral autonomy** in making their own choices. From this, it follows that Ford should have informed its consumers because otherwise they cannot make an autonomous rational decision to buy the car or not. If consumers had known what Ford knew about the safety of the Ford Pinto, they would probably have thought twice before buying the car. By failing to inform them, the rational agency of the consumer was thus undermined, and they were used as *merely* a means (and thus not as an end) to achieve Ford's aim: increasing Ford's turnover. It is not just that Ford endangered people's lives; rather, it is that Ford did so without informing car drivers about the risks.

Moral autonomy The view that a person himself or herself should (be able to) determine what is morally right through reasoning.

3.9 Virtue Ethics

Utilitarianism and Kantian theory both are theories about criteria concerning action. Rather than taking action as point of departure for moral judgment, **virtue ethics** focuses on the nature of the acting person. This theory indicates which good or desirable characteristics people should have or develop and how people can achieve this. Virtue ethics is not exclusively aimed at reason, as the previous two theories were, but is more a mixture of ethics and psychology with an emphasis on developing character traits.

Virtue ethics An ethical theory that focuses on the nature of the acting person. This theory indicates which good or desirable characteristics people should have or develop to be moral.

Virtue ethics is based on a notion of humankind in which people's characters can be shaped by proper nurture and education, and by following good examples. The central theme is the development of persons into morally good and responsible individuals so that they can lead good lives. To this purpose, developing good character traits, both intellectual and personal character traits, is essential. These characteristics are called virtues. They not only indicate how to lead a good life but also what a good life is. Examples of virtues are reliability, honesty, responsibility, solidarity, courage, humor, and being just.

3.9.1 Aristotle

Virtue ethics stems from a long tradition and was already popular in ancient Greece with philosophers like Socrates, Plato, and Aristotle. Aristotle was the first to define virtue ethics as a field of inquiry in itself. According to Aristotle, the final goal of human action is to strive for the highest good: *eudaimonia*. This can be translated as "**the good life**" (or as "welfare" or "happiness"). This does not refer to a happy circumstance that brings pleasure (the goal of classical utilitarians), but a state of being a good person. It means leading a life as humans are meant to lead it; one should excel in the things that are part of being human. As only humans can reason, this is where happiness lies. If we wish to become happy as humans we must use our reasoning to its fullest extent. The good life is not only determined by activities related to reasoning, but is also realized by virtuous activities according to Aristotle. The good life therefore is an active life in agreement with the virtues necessary to realize one's uniquely human potential.

The good life The highest good or *eudaimonia*: a state of being in which one realizes one's uniquely human potential. According to Aristotle, the good life is the final goal of human action.

Aristotle (384–322 BC)

Virtue, then, is a state of character concerned with choice, lying in a mean, i.e. the mean relative to us, this being determined by a rational principle, and by that principle by which the man of practical wisdom would determine it. Now it is a mean between two vices, that which depends on excess and that which depends on defect; and again it is a mean because the vices respectively fall short of or exceed what is right in both passions and actions, while virtue both finds and chooses that which is intermediate. Hence in respect of its substance and the definition which states its essence virtue is a mean, with regard to what is best and right and extreme. (Aristotle, 1980 [350 BC])

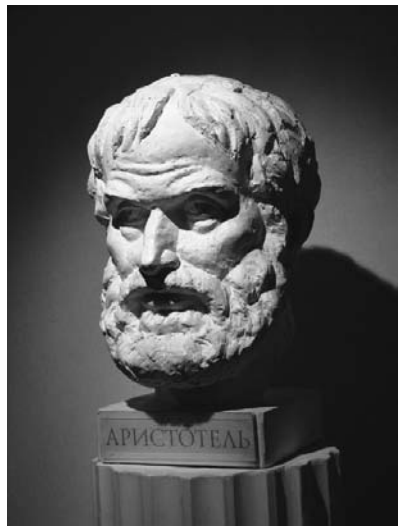

Figure 3.6 Aristotle. Photo: © Argus/Fotolia.com.

Aristotle was born in Stageira, Macedonia in 384 BC. His father was the personal physician to the Macedonian King Amyntas II. As a result, he was sometimes referred to as the Stagerite. He came from a family of doctors, which probably explains his interest in physics and biology. In 367 BC Aristotle entered Plato's academy in Athens. He took lessons there for 20 years and taught there himself. Political circumstances made him leave Athens in 347 BC. He first moved to Assos (the north coast of Asia Minor) and then to Mitulene on the island of Lesbos. There he became fascinated with aquatic animals. Aristotle had a far greater interest in biological questions than his predecessors. He realized that the biology of humans could never be understood without studying the biology of lower animals. Up until the nineteenth century, Aristotle's research on water animals was unsurpassed in biological literature.

In 343 BC, Aristotle went to Pella in Macedonia to take up the duty of raising the 13-year-old Alexander the Great. Despite his election as head of the Academy in 339, he was only able to return to Athens in 334. Up to 323 BC he had his own philosophical school in the Lyceum, which was situated in the north-east of the city. It name, Peripatos, is taken from Aristotle's habit of teaching while he was walking, so that his pupils were often referred to as walkers (peripatol).

The news of the death of Alexander the Great in 323 BC resulted in a strong anti-Macedonian response in Athens, forcing Aristotle to flee "to stop the people of Athens committing a second atrocity against philosophy." Aristotle was referring to Socrates trial in 399 BC. A year later, in 322 BC, Aristotle died in Chalcis aged 63.

Aristotle is one of the most important founding figures in Western philosophy. He was the first to create a comprehensive system of Western philosophy, encompassing morality and aesthetics, logic and science, politics and metaphysics. For example, he is credited with the earliest study of formal logic, and his conception of it was the dominant form of Western logic until nineteenth-century advances in mathematical logic. His work *Ethica Nicomachea* is one of his most accessible texts. It is also the first systematic approach to ethics in Western philosophy. Though Christian Europe ignored him in favor of Plato until Thomas Aquinas reconciled Aristotle's work with Christian doctrine, this work was the origin of certain types of philosophical ethics: the so-called "happiness ethics," which was a dominant philosophy until the time of Immanuel Kant.

Each moral virtue (also referred to as a character virtue by Aristotle) holds a position of equilibrium according to Aristotle. A moral virtue is the middle course between two extremes of evil; courage is balanced between cowardice and recklessness for example, generosity between stinginess and being a spendthrift, and pride between subservience and arrogance. This is an expression of an old Greek notion: there is a certain ratio that is essential to humans that must be kept in balance and should not lean to the left or right if one wishes to achieve an optimal human state. A courageous person will not act as a coward in a dangerous situation, but he/she will also not be reckless and ignore the danger. According to Aristotle, moral virtues are not given to

us at birth nor are they supernatural; they can be developed by deeds. In other words, they can be practiced just like all arts: "For the things we have to learn before we can do them, we learn by doing them, for example, men become builders by building and lyre players by playing the lyre; so too we become just by doing just acts, temperate by doing temperate acts, brave by doing brave acts" (Aristotle, 1980 [350 BC], 1130a).

People must seek a middle course, but this is not a simple matter. Aristotle believed that people know what they want instinctively, but not what they should do. Moreover, the middle course depends on the circumstances in a given situation. In other words, what is good in one case is not necessarily so in another. Unlike Plato (and, later, Kant), Aristotle argues that the good is sometimes ambiguous. However, people are not powerless in finding the middle course. The intellectual virtue sagacity or **practical wisdom** is aimed at making the right choices for action concerning what is good and useful for a successful life. According to Aristotle, a wise man can see what he has to do in the specific and often complex circumstances of life. Sagacity implies a capacity for moral judgment, which is the middle course. Moral virtues and the intellectual virtue go hand in hand.

Practical wisdom The intellectual virtue that enables one to make the right choice for action. It consists in the ability to choose the right mean between two vices.

The influence of Aristotle spread across Syria and through the Islamic world. From the thirteenth century on Aristotle's work started to influence Europe too, because the Christian philosopher Thomas Aquinas (1225–1274) reconciled the heathen virtue ethics with Christian doctrine. Thomas Aquinas distinguished seven virtues. These include the four cardinal virtues of prudence, temperance, justice, and fortitude. These virtues are natural and revealed in nature, and they are binding on everyone. There are also the three theological virtues of faith, hope, and charity. These are supernatural and are distinct from other virtues in their object, namely, God. From 1600 on virtue ethics was falling into oblivion because a new ethics was arising that was focused on rules and paid less attention to virtues. In recent years there is growing interest in the origins of virtue ethics; this is particularly due to the influence of the philosopher Alasdair MacIntyre.

3.9.2 Criticism of virtue ethics

William Frankena argues that virtue ethics is not essentially different from duty ethics (Frankena, 1973). According to him each virtue is accompanied by a moral rule for action and there is a virtue for each moral rule. However, it appears that not all obligations to act can be reduced to virtues and vice versa. Virtues characterize the person and provide insight into the background to action. A person's good character traits do raise expectations, but they do not provide a measure for judging an action. For example, the argument that the actions of an engineer are moral by definition because he is upstanding and reliable will not readily be accepted in a moral discussion. Moreover, it is hard to check whether the engineer acted with proper intentions. So, virtue ethics does not give concrete clues about how to act while solving a case, in contrast with

utilitarianism and Kantian ethics. Opposite this we can argue that having the right virtues does facilitate responsible action, as will become evident in the LeMessurier case that is discussed later.

Finally, we can join Kant in wondering whether we can simply declare a moral virtue to be good in itself without any reservation. Kant's example for this is a cold psychopath whose virtues moderation of conscience and passion, self control and cool deliberation make him much more terrible than he would have been without those virtues.

3.9.3 Virtues for morally responsible engineers

Virtues as reliability, honesty, responsibility and solidarity, are quite general and most are virtues that morally responsible engineers need to possess too. If we look more specifically at the virtues engineers need, then we must focus on engineering practice. Michael Pritchard lists a number of virtues that are more specific than those mentioned above and that are required for morally responsible engineers (see box).

Virtues for Morally Responsible Engineers

- expertise/professionalism;
- clear and informative communication;
- cooperation;
- willingness to make compromises;
- objectivity;
- being open to criticism;
- stamina;
- creativity;
- striving for quality;
- having an eye for detail; and
- being in the habit of reporting on your work carefully. (Pritchard, 2001)

Stipulations in professional codes of conduct often refer to some of these virtues. The professional code of conduct of FEANI (Fédération Européenne d'Associations Nationales d'Ingénieurs or European Federation of National Engineering Associations) recognizes such virtues as integrity and impartiality. A list of virtues, however, does not say exactly how they are expressed in engineering practice, but the presence of certain virtues can have an important influence on the quality and ethical integrity of the work (see the LeMessurier case study).

Case LeMessurier

Figure 3.7 CitiCorp Center in New York. Photo: © Orjan F. Ellingvag/Dagens Naringsliv/Corbis.

William LeMessurier designed the Citicorp Center in Manhattan, which was built in 1977. It was an innovative design because the skyscraper had to be built on pillars nine floors high placed at the middle of the sides of the construction site. This unusual structure was designed to accommodate a church that was being resurrected under one corner of the Citicorp edifice.

During construction, the contractors decided to attach the supports with bolts rather than welding them due to the high costs of welding – this was done without LeMessurier being informed to avoid potential delays. The fact that this would result in much weaker connections was not viewed as a problem because the choice of using bolts was technically correct. In the original design welding was chosen because this would mean that there would be less movement in the skyscraper, which would improve the comfort of its future inhabitants. When LeMessurier heard about the alteration later, he did not worry about the safety risks because a connection using bolts met the safety requirements.

This changed when a month later, in 1978, he received a telephone call from a student whose professor had informed him that the construction was dangerous. The pillars should have been placed in the corners of the sites according to him. LeMessurier explained why the pillars were positioned in the middle of each side to allow the skyscraper to be better able to cope with storms than other standard constructions. Following this, he decided to deal with the technical aspects of his design and safety in his own lectures for building engineers.

Because LeMessurier took the remarks of the student and the professor seriously, he decided to carry out other wind-resistance tests beyond the standard ones. From this intellectual game, LeMessurier came to the conclusion that the building was not as safe as he had thought. A 16-year storm (one that passes every 16 years) could possibly rip loose one of the connections and the whole building could collapse. LeMessurier knew how to solve this problem however.

As soon as he made his finding, he informed the lawyers, insurance companies, the chief architect, the chief executive at Citicorp Center and the city hall. All parties (against all expectations) were highly cooperative and the corrections that LeMessurier advised were carried out. The building is now safer than the way it was originally planned when its construction began.

The media too had to be informed, because so much activity around a brand-new building could not go unnoticed. LeMessurier was highly dubious of being involved with the media, as the press could turn it into quite a story. After the news was published that the building was being altered to withstand more powerful storms, it received no further attention because the press happened to go on strike.

Source: Based on Morgenstern (1995).

For many engineers, LeMessurier's actions with regard to the Citicorp building exemplify the highest virtues of the engineering field. Nevertheless, many will wonder why LeMessurier deserves so much praise, since it was his professional duty to report mistakes to the authorities. Michael Pritchard, however, indicates that the way in which LeMessurier acted was exemplary – and therefore praiseworthy – for the following two reasons (Pritchard, 2001). First, much courage was needed to report the error, even though not reporting it would have been highly reprehensible. The report could have damaged his reputation considerably. Second, LeMessurier not only reported the problem, he also proposed a solution to it, which is characteristic of a virtuous engineer in Pritchard's opinion.

By taking seriously the objections of the student and his professor, LeMessurier also demonstrated another virtue: openness to criticism. Instead of ignoring the criticism because the construction met the safety requirements, LeMessurier decided to check everything and recalculate it. This demonstrates his dedication to safety of the general public. The case shows that virtues can direct the responsible actions engineers need to take in professional practice.

3.10 Care Ethics

Using utilitarianism and Kantian theory, we try to form a balanced moral judgment about the right way to act in a given situation. In these ethical theories an appeal is made to abstract and general principles, such as the utility principle and the reciprocity principle (or the universality principle). No attention is paid to the specific social context of the moral situation in question. These theories presuppose an independent and rational actor who makes decisions in a vacuum.

Care ethics An ethical theory that emphasizes the importance of relationships, and which holds that the development of morals does not come about by learning general moral principles.

Care ethics – initially inspired by the work of Carol Gilligan (Gilligan, 1982) – emphasizes that the development of morals does not come about by learning general moral principles. Its basis is that people learn norms and values within specific contexts and by encountering concrete people with emotions. By recognizing the vulnerability of the other and by placing yourself in his or her shoes to understand his or her emotions, you can learn what is good or bad at that particular time. Care ethics focuses attention on the living and experienced reality of people in which mutual relationships can be viewed from different perspectives, and where people's abilities and limitations impact moral decision-making.

3.10.1 The importance of relationships

Philosophers of care ethics argue that there is moral significance to the specific details of our lives, details that tend to be disregarded when we formulate "the good" in terms of general principles. We have seen that utilitarianism tends to ignore personal relationships, but that it does make a difference with whom we have a personal relationship. We have special relationships with our children, relatives, friends and colleagues. These relationships are coupled to special responsibilities and moral obligations. Moral problems are first and foremost understood in terms of responsibility of the individual with respect to the group. The solution of moral problems must always be focused on the maintenance of relationships the people have with each other. Besides people, companies can have special relationships too, such as the employees, suppliers, and people living close to a factory.

In care ethics the connectedness of people is key; the mutual responsibility and care for each other. People are connected to each other and through this connection there is attention for your fellow human being. People feel responsible for each other. Care arises from this involvement. Care encompasses all typically human activities that we carry out to maintain, continue, and repair our world, so that we can live in it as best as we can (cf. Tronto, 1993). Though care in this description is primarily described as an action, it is also important to look at care as a certain attitude or motivation.

Care ethics has some grounds in common with virtue ethics. Care ethics places the relationship central together with the acquired attitude of the person who can provide care. A proper attitude that one has acquired involves compassion, attention, and being caring. These virtues stimulate people to become emotionally involved and

responsible. Moreover, both approaches are aimed at the good life; virtue ethics is based on good character traits and care ethics is based on care.

Care ethics specifically focuses the attention on the relationships that people have with each other. In relationships the recognition of vulnerability and dependence play an important role, especially if the relationships are asymmetrical, such as the relationship between parent and child, between employer and employee, or between doctor and patient. Thus, it is important to be conscious of the types of relationships we have and the role we have within them. Roles determine to what degree we can expect care from each other and they also determine whether we should take the other into account in our actions. Besides that, it is important to know how people respond to each other's vulnerabilities. The degree to which we respond appropriately and the way we shape our responsibility cannot be indicated in advance using rules, but has to be answered in the context in which the need for care arises.

3.10.2 Criticism of care ethics

A frequently-voiced criticism of care ethics is that it is philosophically vague. This is mainly due to the fact that it is unclear what "care" exactly entails. The term is used in numerous contexts and is also used to indicate more than one attitude or action. As a result it is not very normative. Care ethics assumes that caring is good in itself, thus it can tell us neither what makes a particular attitude or action right, nor what constitutes the right way to pursue them. Care ethics judges a situation by means of "good care" and not according to principles. But the question is what turns "care" into "good care"? Finally, care ethics like virtue ethics does not give concrete indications how one has to act in a particular situation, in contrast with utilitarianism or Kantian ethics. Care ethics is more focused on the attitude of the person who can provide care than on indications for ways to solve a concrete moral problem.

3.10.3 Care ethics in engineering

Although the attempt to develop a care ethics approach to engineering ethics is still in its infancy, care ethics' emphasis on care (e.g., for safety and sustainability) responsibility, and other concerns shared by engineers, suggests that is has a contribution to make to engineering practice. One of the possible applications is a social ethics of engineering (see box). The ideas of care ethics can also work for companies: they can contribute to the vision and mission of a company and can be a major influence on the practice of corporate social responsibility. One essential characteristic of a business situation is that one is working within an intersection of different relationships. A company has dealings with various parties and institutions, which have diverse and sometimes contradictory expectations. Employees have relationships with clients or contractors, with their employer, with consumers, with suppliers and sometimes even with the natural environment. The point is that an employer or employee has to ask himself/herself how he/she as part of the enterprise can best deal with the interests and rights of others. This has to be achieved through an attitude of compassion, attention and care.

Social ethics of engineering An approach to the ethics of engineering that focuses on the social arrangements in engineering rather than on individual decisions. If these social arrangements meet certain procedural norms the resulting decisions are considered acceptable.

Social Ethics of Engineering

Most of the approaches to ethics in engineering focus on the individual. Such approaches tend to neglect the relationships with others in which engineers enter in their work and that are morally relevant. A social ethics approach would pay more attention to such relationships and would inquire into the social arrangements in which engineering decisions are made. Relevant social arrangements include for example the way a design team or the engineering company is organized and the way that relations with stakeholders are structured. In the case of the Challenger disaster discussed in Chapter 1 it is, for example, striking that the crew was not involved in the discussion and was unaware of the launch debate the night before.

Richard Devon has proposed a number of norms of engagement for the participation of engineers in group processes, involving both engineers and non-engineers. These norms are:

- competency;
- cognizanze, requiring interdisciplinary skills and breadth built into the group;
- democratic information flows;
- democratic teams;
- service-orientation;
- diversity;
- cooperativeness;
- creativity; and
- project management skills

Some of these norms of engagement are rather similar to the virtues for morally responsible engineers mentioned by Michael Pritchard (see 3.9.3). The main difference is that whereas virtues are usually seen as individual character traits, these norms are understood at the level of group processes and social arrangements.

A social ethics approach emphasizes procedural criteria for dealing with moral problems in a group process rather than substantial moral norms that are to be applied by individuals. It leaves open the possibility "that the individual may be unhappy with the outcome but be able to accept it because the process was perceived as the most acceptable way for a group" (Devon, 1999, p. 91) to reach a decision.

Source: Based on Devon (1999), Devon (2004), and Devon and Van de Poel (2004).

In the case of child labor, in Section 3.7, the following reasoning would be applied from the perspective of care ethics. Since the children are involved in the production of IKEA articles, IKEA has a relationship with those children. The children are extremely vulnerable and dependent on IKEA: if IKEA stops with child labor then the consequences would be that the children would end up performing slave labor or becoming

prostitutes. IKEA has the responsibility to care for these children. In this specific case this care could involve improving work conditions, providing medical care, and developing a schooling program. In this example of an application of care ethics, we see that the question whether child labor should be abolished fades into the background and that care ethics makes IKEA's involvement with the children the central issue. Another example is the care for employees by the employer in cases of mass unemployment, or mergers, takeovers, down-sizing or relocation of the enterprise. The employer has a relationship with the employees and from this relationship follow certain obligations of care between the employer and the employees. This care can consist of active involvement in transfer of employees within the company or finding places of work outside the company. From these two examples it becomes clear that a care ethics approach places high demands on an enterprise concerning responsible entrepreneurship.

In the Ford Pinto case, Ford had a relationship with the consumers. This relationship was asymmetrical since the consumers had in general no clear idea of all the relevant technical aspects of the Ford Pinto, and the consumers were dependent on the information Ford gave. Ford should recognize this vulnerability of the consumer, and therefore Ford had the responsibility to inform the consumer about the (un)safety of the car, or Ford should not have marketed the car.

3.11 Applied Ethics

Some philosophers believe that applied ethics is essentially the application of general moral principles or theories to particular situations (cf. Gert, 1984; Hare, 1988; and Smart, 1973). This view is, however, problematic for a number of reasons (cf. Beauchamp, 1984; and MacIntyre, 1984b). One is that no moral theory is generally accepted. Different theories might yield different judgments about a particular case. But even if there were one generally accepted theory, framework, or set of principles, it is doubtful whether it could be straightforwardly applied to particular cases. Take a principle such as distributive justice. In many concrete situations, it is not clear what distributive justice exactly amounts to. What does, for example, a just distribution of technological risks mean? Should everybody be equally safe?; should everybody have the same minimum level of safety?; or does someone's right to safety depend on the amount of taxes he or she pays? All these can be considered as an application of the principle of distributive justice to the distribution of risks, but clearly these answers reveal different moral outlooks. Without doubt, part of this confusion could be solved on the theoretical level, that is, by further elaborating the notion "distributive justice" and developing an ethical theory about it. It seems doubtful, however, whether this would solve all applications issues. This brings us to a third point. Theory development in ethics in general does not take place independent of particular cases. Rather, theory development is an attempt to systematize judgments over particular cases and to provide a rational justification for these judgments. So if we encounter a new case, we can of course try to apply the ethical theory we have developed until then to that case, but we should also be open to the possibility that the new case might sometimes reveal a flaw in the theory we have developed so far.

If ethical theories do not provide moral principles that can be straightforwardly applied to get the right answer, what then is their role, if any, in applied ethics? Their role is, first, instrumental in discovering the ethical aspects of a problem or situation. Different ethical

theories stress different aspects of a situation; consequentialism for example draws attention to how consequences of actions may be morally relevant; deontological theories might draw attention to the moral importance of promises, rights and obligations. And virtue ethics may remind us that certain character traits can be morally relevant. Ethical theories also suggest certain arguments or reasons that can play a role in moral judgments. These arguments should be sound, since unsound arguments obstruct a rational discussion. Therefore, normative argumentation is the topic of the next chapter, which can help to distinguish good arguments from bad ones in ethical judgment.

3.12 Chapter Summary

While morality is the totality of opinions about what is good and right, ethics is the critical reflection on morality. Normative ethics not just describes what morality is but it judges morality and tries to formulate answers to questions like: what kind of person should I be?, and how should I act? Normative ethics, therefore, tries to come to certain normative judgments. However, it is not a manual or an unambiguous code in which you can look up the answer how to act in a difficult situation. Rather it is an area that is characterized by a variety of partly conflicting ethical theories about how to act. The three best known ethical theories in Western philosophy are consequentialism, deontology, and virtue ethics. Whereas virtue ethics focuses on the acting person and his/her character traits, deontology focuses on the actions themselves and consequentialism focuses on the consequences of actions.

Utilitarianism is a main variety of consequentialism. It measures consequences by their effect on one value: pleasure or human happiness. It is based on the so-called utility principle: the greatest happiness for the greatest number. Utilitarianism requires drawing up a moral balance sheet or a cost-benefit analysis to determine what the action with the best consequences is. Despite its intuitive attractiveness, utilitarianism has been heavily criticized. Typically, these criticisms have let to adaptations in the original theory. One criticism is that utilitarianism can lead to exploitation. To deal with this problem, John Stuart Mill has formulated the freedom principle: everyone is free to strive for his/her own pleasure, as long as they do not deny or hinder the pleasure of others. Another criticism is that actions are sometimes right or wrong independent of their consequences. Lying is an example. Rule utilitarianism is an attempt to deal with this criticism: it focuses on the utility of rules of action rather than on the utility of individual acts. Other criticisms of utilitarianism are that happiness is difficult to measure, that consequences are hard to predict, that it ignores the distribution of pleasures and pains and that it ignores personal relationships.

Immanuel Kant is the main representative of deontology. He formulated a principle for judging the rightness of actions that is independent of the actual consequences of those actions, the universality principle: Act only on that maxim which you can at the same time will that it should become a universal law. According to Kant this principle is basically the same as his reciprocity principle: Act as to treat humanity, whether in your own person or in that of any other, in every case as an end, never as means only. Two main criticism of Kant's theory are that it ignores conflicts between norms and that it is too rigid. A way of dealing with such criticisms may be to conceive of norms as prima facie norms rather than as universal norms that apply to each and every situation.

Virtue ethics focuses on the character of the acting person rather than his/her actions or the consequences of those actions. It goes back to Aristotle but is still relevant today for engineers. Relevant virtues for engineers include professionalism, objectivity, being open to criticism, stamina, creativity, and having an eye for detail. The main criticisms of virtue ethics include that it is does not tell you how to act and that virtues are not unconditionally good. To the first, virtue ethicists might reply that an engineer who possesses the right virtues acts differently from one who is lacking them. To the second, they would probably say that virtue ethics does not involve just isolated virtues but also practical wisdom: the ability to make ethical judgments in complex situations.

A fourth theory that was briefly discussed is care ethics: it does not focus on abstract principles but rather on the relations between people. This is relevant for engineers because they are often involved in complex projects with many stakeholders who partly rely on them. One way to apply care ethics to engineering is to look for norms that the social arrangements in engineering should meet to express due care to all relevant stakeholders.

As the diversity of ethical theories testifies there is not a single answer to the question what is right or wrong. However, one should not conclude from this that anything goes. Some things are morally good or morally bad according to all theories. Moreover, if theories disagree, they are still helpful in distinguishing the ethical questions in a concrete situation, in more precisely analyzing the situation and in suggesting possible reasons and arguments for acting in one way rather than the other. Even if using one or more of the theories is no guarantee for making the right decision, a moral decision that just ignores the ethical theories, and the underlying ethical concerns, is usually plainly unethical.

Study Questions

1 Mention a number of differences between values and norms, and between values and virtues.
2 Which of the following statements are descriptive, and which are normative?
   a. People should accept the risks of nuclear energy.
   b. The majority of your colleagues finds this proposal unacceptable.
   c. There is life on Mars
   d. Engineers who blow the whistle are usually in a weak position from a legal point of view.
3 Describe the main ideas of "normative relativism." What are the criticisms of normative relativism?
4 John Stuart Mill has argued that Kant's ethics is really a masked version of consequentialism because the consequences of actions do play an important role in his ethics – in spite of what Kant himself says. Why do you think that Mill is arguing this despite the fact that Kant himself denies that consequences are relevant to his theory? Do you agree with Mill? Explain why or why not.
5 Describe the main ideas of Bentham's utilitarianism. What criticism of Bentham's theory did Mill articulate?
6 What is rule utilitarianism? Describe how a rule utilitarian would go about determining whether I may "copy and paste" my essay from the Internet for a course. How would this differ from how an act utilitarian would reach a decision on this matter?
7 Describe the main idea of care ethics. What criticism do care ethicists have of utilitarianism and Kantian theory?
8 An engineer helped a colleague with her work; and this colleague happened to be rather pretty. The engineer thinks "Why not have an affair with her?" And since she is Kantian, the

engineer argues as follows: "If you really want to express respect for me, then you should join me for a drink in my room. Otherwise you would have treated me only as a means and – as a good Kantian – that is not something you can possibly want!"

a. What is it to treat someone only as a *means* according to Kant?
b. What is it to treat someone as an *end* according to Kant?
c. What is her answer if she is a good Kantian?

9 Suppose that it is possible to download copyrighted music through the Internet without paying for it. Suppose that the makers of such music (the artists) do not want their music freely copied in this way.

a. How would Kant address the question of whether it is morally permissible to download such music by such artists without paying for it? Explain in detail what a Kantian would say.
b. Would a utilitarian give a different answer? Why or why not?

10 James is an engineer working for the company AERO that produces aero-engines. The company is developing a new type of aero-engine called the FANX. James is responsible for the testing of the FANX. He is in the middle of conducting a range of crucial tests for the reliability of the new aero-engine. Yesterday, Bill – who is James' boss - has asked James to finish his test reports within a week because an important potential customer will visit AERO next week and wants to have a look at the first test reports. James first reaction is to refuse Bill's request: he is not able to finish the test report within a week; he first needs to do more tests. James considers these additional tests crucial for gaining good insight in the reliability of the FANX. Bill tells James to abandon the planned other tests and to start writing his report immediately. Later, there will be more time to do the other tests. Bill also tells James that if James refuses he will ask Eric to write the report. James says that he really needs more time. Moreover, he objects, Eric is not knowledgeable of the tests and will not be able to write a sound report. After the meeting, James contacts Eric who says that he agrees with Bill and that he will finish the test reports if Bill asks him to do so.

Suppose that James the next day decides to follow Bill's order and to finish the reports immediately, abandoning the other tests.

a. Can this choice of James be justified in utilitarian terms? Explain why or why not.
b. What should James do if he would try to apply Kant's categorical imperative to this situation? Argue your answer.
c. What virtues are relevant for an engineer doing tests like James? Mention at least four.
d. What action is supported by these virtues? Argue your answer.
e. Which normative theory is in your opinion best able to deal with this moral problem? Argue why.

Discussion Questions

1 Are there any absolute rules that should never be broken, whatever the circumstances? Defend your view.
2 Choose an event in your life where you believe you acted ethically. Discuss the event in terms of virtue ethics, Kantian ethics, and utilitarianism.
3 What makes a decision an ethical one?
4 How much should we take potential consequences into account when making an ethical choice? How much work should we put into making sure that the assessment of outcomes is correct?
5 Should we always do what is morally best? Is there a difference between morally decent and heroic behavior?