

2 *The foundations of ethics*

morality is often called by cultural and religious groups and scholars of other disciplines to justify their actions and, in particular, to give them moral and social plausibility. This is not just a matter of personal belief; it is also a matter of social credibility, as nothing can be done without the support of the community, the majority of which may be inclined to accept the moral or ethical position.

Introduction

For millennia we have had countless people standing in the marketplace of ethics telling us what they think should be the ethical foundation of our life journey doctrines, metaphysical theories (theories about the underlying nature of reality), ethical theories and the like.

In this chapter we will:

- Trace the developments of ethics from its early association with religion to autonomous ethics.
- Outline the postmodern era, when ethics seems to have become relativized.
- Trace alongside this the historical development of the engineer.
- Critically examine ethical theories.
- Note developments in ethics, not least the ethical systems based on virtues.
- Develop the virtues in relation to engineering and the professional skills.

Ethics

Exercise

Discuss with a fellow student:

1. What do you see as the foundation of your ethical practice?
2. What informs your understanding of right and wrong, good or bad behaviour?
3. Where does that understanding come from? Your family, your culture, your community, your religion, your school, your place of work, your university?
4. What difference do your different foundations make to each other?

For the engineer in the Middle Ages the foundation of ethics was **not** a problem. As we saw in the Chapter 2 the engineer developed his or her role in relation to the major contemporary power structures. The kings and princes in turn developed their role in relation to their key belief systems. Constantine (325) had realized that a shared belief system, in his case Christianity, would provide the best means of underpinning the unity of his Western empire. Kings had a **divine** right to rule, something harking back to the Jewish tradition of the Kings. It is precisely this tradition to which Handel's Coronation Anthem (1727) 'Zadok the Priest' alludes. Even today the coronation in England takes place in Westminster Abbey.

For the engineer in Europe of the Middle Ages, then, there was little doubt that God was on the side of the King, and there **were** no issues or ambiguities about professional ethics. You did as you were commanded and right was defined by the religious belief system, which was set out in the different scriptures. Islam sets out some ethical parameters, including advice on business ethics, which is strongly against usury (Hadith: Mishkat, 2799; Koran 2:276). The Judeo-Christian scriptures communicate the word of God through:

- Stories and history that illustrate key ethical concepts or attributes.
- Codes that sum up core ethical principles.

The **Ten Commandments** are a good example of a code, revealed by God to Moses, by which many people claim to live.

The Ten Commandments

- Worship only God
- Make no images of gods
- Do not blaspheme
- Keep the seventh day holy
- Respect your parents
- Do no commit murder
- Do not commit adultery
- Do not steal
- Do not give false testimony against your neighbour
- Do not covet your neighbour's possessions or relationships (Exodus 20:3-17)

More broadly, religions provide a framework of metaphysical meaning within which core values and motivations for being moral are set out. Metaphysics involves beliefs about the ultimate reality of the world. In the Judeo-Christian tradition, for example, there is the doctrine of the 'fall', the way in which humanity distanced itself from God. This points to a view of man as innately sinful, and suggests that humanity is not capable of acting ethically without the help of God. Another major doctrine is about the end of time and how God will, in some way, judge all. This provides a powerful motivation, with the options of heaven or hell a direct consequence of how we choose to behave in this life.

Different religions had different ethical stresses and there were, and are, different viewpoints about what ethics is within each religion. Nonetheless, ethical meaning was tied to religious beliefs, and there was broad agreement amongst religions about the 'core ethical attitude, summed up as respect for common humanity and the so-called 'golden rule'. Some of the versions of this include:

- *Christian*. 'Treat others as you would like them to treat you' (Luke 6, 31). 'Love your neighbour as yourself' (Matthew 22, 39).
- *Hindu*. 'Let not any man do unto another any act that he wisheth not done to himself by others, knowing it to be painful to himself' (Mahabharata, Shanti Parva).
- *Confucian*. 'Do not do unto others what you would not want them to do to you' (Analects, Book xii, 2).
- *Buddhist*. 'Hurt not others with that which pains yourself' (Udanavarga, v.18).
- *Jewish*. 'What is hateful to yourself do not do to your fellow man. This is the whole Torah' (Babylonian Talmud, Shabbath 31a).
- *Muslim*. 'No man is a true believer unless he desires for his brother what he desires for himself' (Hadith Muslim, imam 71-2).

Gradually, however, the association of ethics and religious belief began to erode.

- Metaphysics, especially in its supernatural form, could not be validated empirically.
- It is not easy to discern the voice of God in scriptures, which are a product of culture, expressed through laws, rules, songs and stories. The difficulty with religion and cultural context is neatly summed up in the following excerpt of an amusing open Internet letter.

A letter posted on the Internet to Dr Laura, a hard-line Christian broadcaster who argued that homosexuality is wrong, based on Leviticus 18.22. The writer 'accepted' Dr Laura's view on homosexuality, but wanted some clarification on some of the other Old Testament laws.

Dear Dr Laura,

- I would like to sell my daughter into slavery, as it suggests in Exodus 21:7. In this day and age, what do you think would be a fair price for her?
- Leviticus 25.44 states that I may buy slaves from the nations that are around us. A friend of mine claims that this applies to Mexicans, but not Canadians. Can you clarify? Why can't I own Canadians?
- I have a neighbour who insists on working on the Sabbath. Exodus 35.2 clearly states that he should be put to death. Am I morally obliged to kill him myself?
- My uncle has a farm. He violates Leviticus 19.19 by planting two different crops in the same field, as does his wife by wearing garments made of two different kinds of thread. He also tends to curse and blaspheme a lot. Is it really necessary that we go to the trouble of getting the whole town to stone them (Leviticus 24. 10-16). Couldn't we just burn them to death at a private family affair like we do with people who sleep with their in-laws (Leviticus 20.14)

I am confident you can help
Your devoted fan, Jim

None of this is to subvert religious ethics. Nonetheless, it shows that any religious command needs to be interpreted and critically tested, not accepted regardless of context or reason. Hence, ethics cannot be simplistically dependent on religion. Plato already pointed to this in the dialogue *Euthyphro*. In effect, he asks, is a thing good because God wills it or good because we agree that there is a rational basis for it. But how can something be good just because someone says it is, even God? On what can their judgement be based? The upshot is that ethical judgements have to have a reason, and this makes the basis for those judgements independent from God. Hence, the argument is that ethics is autonomous – free from religion.

In practice, so many religious prescriptions are based on reasoning. A good example is the Ten Commandments. Exodus describes them as coming from God. However, they can simply also be seen as pragmatic good sense. A relatively small group trying to make its way across inhospitable terrain of the desert would have needed a code of practice in order to maintain discipline and thus survive.

With the Enlightenment, a time when writers such as Kant (1724–1804) stressed the capacity of man to make rational decisions, the autonomy of ethics was further reinforced.

Engineers

Meanwhile, whilst ethics was becoming loosened from the ultimate reliance on religion, the discipline of engineering was developing. Firstly, across Europe there was a move away from engineers as royal employees to a group of experts who had skills that required training. This included the development, in the eighteenth century, of schools for engineering in Prague and France. It is in the nineteenth century that the full extent of the industrial focus of engineering developed, based in England, with the rise of the industrial revolution, not least through the development of steam engine technology that was applied to mining, railways, mills and so on. With these developments came the first UK engineering society, the Institution of Civil Engineers (1818). The engineer was closely associated with technological progress and a real pride in the capacity of nations to expand in this area.

The later part of nineteenth-century engineering stresses even more the identity of the engineer as a technical expert, with greater emphasis on technical and scientific training. Technological progress promoted the many different engineering specialities, thus diminishing the idea that engineering has one role or a single voice (Grelon 2001). Meaning and purpose were therefore focused on the role of the engineer as an expert, and also on the role of the engineer as an enabler of technological progress. Thomas Tredgold of the Institution of Civil Engineers was thus, in 1828, able to define civil engineering as follows:

Civil Engineering is the art of directing the great sources of power in Nature for the use and convenience of man. . . . The most important object of Civil Engineering is to improve the means of production and of traffic in states, both for external and internal trade.

(Davis 1998, 15)

In all this, engineering became associated with a very different kind of power, involving both modern democracy and the free market.

Ethical theories

Meanwhile, the study of ethics was focusing on moral theories as foundations of ethics. These were the rational foundations for ethics. The two most important were the utilitarian and deontological theories.

Utilitarian theory

This theory suggests that we find the meaning of ethics by looking at the consequences. In particular something is right if it maximizes the good, producing the greatest good for the greatest number (Mill 1806–73). The classic example of this theory is the scenario of the portly potholer who is stuck in the cave exit, with fifty of his colleagues behind him. If there is no alternative but to use explosives to blow open the hole then it is acceptable to sacrifice him for the good of the majority. The stress in all this is social good. Hence, if we look at abortion, for instance, we cannot say that this is wrong in itself. It can be right if it maximizes utility. In this case the argument would be that making abortion legal saves the lives of many pregnant women, who in the 1960s only had recourse to back street abortionists, and enables greater life choices for women as a whole.

Principles can be a rule of thumb, but cannot be absolute, and can reasonably be broken if they do not produce the most good. But what is the good? Mill's answer to that is happiness. All other goods are simply a means to that intrinsic good.

There are several different kinds of utilitarianism, including:

- Act utilitarianism, focusing on the act that is likely to produce the most good.
- Rule utilitarianism, focusing on sets of rules or codes that would produce the most good.

Utilitarianism is close to the mindset of the engineer who is looking to maximize the good in technological progress. Trying to base all ethical judgements on this utilitarian theory, however, is problematic. Firstly, Mill argues that happiness involves the higher, not the base pleasures. But who decides what is a higher pleasure? The very concept of the good that should be maximized is not clear. Secondly, the stress on everything as a means to happiness can easily subvert morality, with the end justifying any means. Can it be right to kill the populations of two whole cities in order to end the Second World War? Can it be right to accept or give bribes to keep a workforce employed? Can it be right to use torture in order to save lives? At the very least, such examples raise real conflicts about means. Thirdly, the stress on good for the majority can easily lead to the oppression of the minority. Just because something will benefit 50.5 per cent of the population does not make it good, and might in any case disadvantage the 49.5 per cent. Utilitarianism then is a useful tool but taken as a single moral theory it offers more questions than answers.

Deontological theory

The deontological approach to ethics argues that duties are the base of ethics rather than the consequences. Right actions, according to Emmanuel Kant (1964),

are prescribed by duties – keep promises, be truthful, be fair, avoid inflicting suffering on others and reciprocate the kindness of others. Kantian ethics is thus about doing the right thing regardless of whether it makes one happy, quite the opposite of Mill's view. Kant also sees duties specific to the self, such as do no harm to the self, develop character and skills.

What makes such prescriptions duties? Kant suggests that they:

- embody respect for persons,
- apply without qualification to all rational persons, and
- are universal principles.

What makes a person worthy of respect is the capacity to be rational and to develop the good that will enable the person to do their duty and to fulfil their purposes. This respect involves treating people as ends in themselves with their own purpose and capacity to fulfil it. This in turn means treating people not as a means to our ends. Coercion and manipulation of different kinds exhibit disrespect in these terms, such that the other is only useful for what they can do for you, with the aim to ensure that they do that.

This leads to certain key moral imperatives. Kant contrasts these, referred to as categorical imperatives, with nonmoral imperatives, which he refers to as hypothetical. Hypothetical imperatives are commands that are based on a hypothesis. 'If you want to get fit then exercise regularly' is one example. Categorical imperatives do not have such conditions. It is simply wrong to cheat or to break a promise. These are basic principles that are true without any reference to conditions.

Such principles should apply universally, and Kant argues that the most common principles pass this test. 'Promises should be kept', for example, applies in all situations. If we did not keep promises then the very meaning of the word would be questioned.

For Kant this points to a view of ethics that is based upon absolute principles, not because they are from the word of God but because they have this rational foundation.

Once again, however, it is difficult to see this as an exclusive foundation for ethics. Yes, it makes sense to stress the responsibility and duty of the person. However, firstly, absolute principles are very hard to pin down. The principle of promise keeping is justified by saying that if people do not keep promises then the meaning of promise keeping is eroded. But this is true only if promises are broken regularly. It is possible to say that, all things being equal, promises should be kept, the reasons being that they form the basis of a contract. However, it may be possible that a person has to break a promise because of some greater concern. For example, a person may have promised to maintain confidentiality only to realize that the person involved is a murderer who could kill again. Equally it

could be that a person is not able to keep a promise. For example, a person may promise to support a particular project but lose the resources, personal or financial, to do this. In both these situations it could be argued that it is wrong to keep a promise. Behind all this it is very difficult to find any principle that does not have an exception to it.

Secondly, absolute principles have the danger that they discourage the responsibility of the individual for moral reasoning in context. This can lead to a lack of awareness of the situation, with principles applied uncritically.

Thirdly, the idea of reason as the basis for respecting another person excludes all human beings who are unable to reason intellectually, not least the severely learning disabled. The very word 'person' is as much a word that expresses value as it is a description. Hence, there is real danger of excluding some humans from that respect if it is at all conditional, i.e. if respect is based on some particular aspect or property of the person. The example of the Holocaust shows no respect for many groups of people outside the Third Reich and hence the inability to see them as people.

Intuitionism

Ranged against the two examples of rational foundations to ethics, Hume (1975) had little time for the place of reason as a foundation for ethics. We must rather look to the heart, the passions. Reason could provide the rational justification of means, but nothing can provide a rational justification of ends. The promptings of the heart are no excuse for ignorance, and reason has to guide our understanding of the world and the possibilities of that world, but intuition is very much at the base of what we determine to be good. Hume's position suggests that reason and emotion are critical parts of any foundation of ethics.

Questions

Which of these major ethical theories informs your ethical practice?
Which of them might best inform ethics in engineering, and why?

Postmodernity

With the twentieth century came the rise of postmodernity and a challenge to all attempts to find a foundation in ethics. Scholars argue fiercely about postmodernity and what it might mean (Connor 1989). Postmodern theory suggests new ways of understanding language and social constructs with the natural foundations

of knowledge rejected, and no correspondences between language and reality. The human person is no longer autonomous but rather the effect of discourse and power systems (Baudrillard 1983). With no objective sense of reality each person has to create their own reality and underlying life meaning. Whether or not we agree with such theory, it is hard not to accept something of the postmodern *experience*, in which old certainties have broken down:

- A breakdown of any sense of objective knowledge and in particular adherence to the so-called 'grand narratives' of the twentieth century and before. These are the 'stories' that claim some universal truth and that influence whole generations (Lyotard 1979). For example, in England before the First World War (1914–8) there were the grand narratives of the Empire and of Christianity. The first of these saw the Empire as a force for good, both civilizing the world and enabling technological progress. Christianity, especially focused in the Church of England, was seen as the basis for most social meaning and support. Hence, each Church of England parish looked after the parishioners from birth, through marriage, to death. The First World War and ensuing economic and health crises destroyed those cosy views.
- A breakdown of patterns of behaviour and institutions such as marriage and the family, caused partly by increased wealth and mobility, and changes in cultural attitudes. This has led to massive increase in the divorce rate, an increase in cohabitation rather than marriage and the increasing acceptance, legally and culturally, of single sex partnerships
- A greater awareness of cultural and religious diversity within society, caused by increased migration and global awareness (Markham, 1994). This has led to a greater acceptance of ethical plurality, i.e. that ethical meaning is based in many different cultures and can lead to very different practices.
- A greater acceptance of a liberal view of ethics. Such a view argues that one can do anything as long as it does not affect another adversely. This has partly developed as a result of the New Age, in the late twentieth century. The New Age involved many different groups that argued against morality being prescribed for them, by Church or by State. The individual person had every right to work out for themselves their value and belief systems (Perry 1992).

All of this has tended to unpick ethics from community and tradition, with shared foundations sliding into rights-based morality, and the lack of a shared ethical understanding. Ethical relativity means that there is no agreed approach to ethics. Each person or group will work out their own ethical meaning. The only thing that binds them together then becomes an agreement to tolerate the different views, unless they lead to the harm of another.