Chapter 9

Conflicting Duties and Dissent

Chapter Objectives

Having read this chapter, completed the included exercises, and answered the associated questions, readers should be able to

- explain the nature of loyalty and of legitimate authority and their relation to faithful agency;
- describe the nature of and give specific examples of conflicts of interests;
- explain the different forms of whistle-blowing and conditions under which whistle-blowing would be morally permissible and required.

CASE STUDY ONE—THE CASE OF JOHN'S FRIENDSHIP

John is a design engineer working for a major car company, the Carbon Car Company (CCC). He has been working on the development of a new sports car. One day at work, his wife, Audrey, calls saying his best friend since childhood, Ken, has been killed in an automobile accident. John attends the funeral, at which time he discovers Ken had been driving a CCC vehicle, a Rebel SUV (Sports Utility Vehicle). John's vehicle rolled over while traveling approximately 60 mi/h on a straight road. John commiserates with Ken's widow, Mary, and three children, all of whom he has become very fond over the years. In fact, John introduced Ken to Mary.

After returning home, John throws himself back into design work, generally trying to forget about the tragic accident. Every once in a while, however, he hears about performance problems associated with the Rebel SUV. John generally ignores these, since he is busy with his own design work on a sports car.

Approximately 6 months later, John receives a distraught call from Mary, telling him CCC has disclaimed all responsibility related to Ken's accident, claiming it was solely the result of driver error. Since John works for CCC and knows a great deal about cars, Mary wants to know if there is anything he can do to help her with the case. John decides to investigate the issue by examining a number of confidential company documents on his work computer. To John's surprise, he discovers a significant number of reports related to Rebel SUV rollovers—more than a few of which have resulted in fatalities. Comparing internal company statistics with publicly available data, John realizes the Rebel has approximately five times the industry average of rollovers. He does not recall ever seeing any public reports regarding this information.

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EXERCISE ONE—THE CASE OF JOHN'S FRIENDSHIP (PART ONE)

With regard to the case of John's friendship, complete steps 1–10 of the case-study procedure, using all relevant principles reviewed thus far.

9.1 AUTONOMY AND DISSENT

The previous chapter discussed the notion of autonomy for engineers, in terms of the claim engineers should be able to exercise independent judgment based on their professional expertise: if engineers have a responsibility to ensure public safety while introducing new technologies into society, then they should have the freedom to do so. Otherwise, engineers should not be held responsible for their actions. As mentioned previously, however, that perspective is based on engineering alone. This chapter further examines some of the potential limits on the exercise of independent judgment by engineers, based on other roles they occupy.

9.2 THE DUTY OF LOYALTY: A SPECIAL BOND OF IDENTIFICATION

Engineers have a duty to the public, a claim established in previous chapters. Likewise, however, they are also employees and, as such, they have a duty of obedience, stated in the first principle of employee ethics: "Corporate employees should endeavor to obey all legitimate, job-related directives." This duty can be conceived in terms of the broader context of loyalty.

Codes of engineering ethics have traditionally emphasized loyalty in a narrower sense—in terms of a duty of loyalty to an employer or client, providing the basis for discussions of conflicts of loyalty. From the perspective of global engineering, however, the issue is both more fundamental and complex. In a sense, it could be considered the most fundamental problem in global engineering ethics: in many societies, the issue of loyalty to something other than engineering seemingly overrides all other considerations. Hence, making loyalty the basis for ethical discussions potentially creates real problems.

"Loyalty" refers to a special bond established between two parties, individuals, group of persons, or institutions. Loyalty could even be ascribed to an ideal, such as social justice. This means that the relationship is a close and enduring one, involves trust between the parties, and that a relationship of identification exists with the object of loyalty, a relation of care and concern. Discussions often center on loyalty to one's country, family, social group, or even to pets. One's occupation can also be an object of loyalty, as can one's employer.

The importance of loyalty here consists in the fact that, when one becomes an engineer, one has a duty of loyalty to engineering as a profession and that, when one becomes an employee, one has a duty of loyalty to the company for

which one works. More specifically, one should care and be concerned with the interests of engineering and one's employer. As was discussed previously, in becoming an engineer and receiving a paycheck, one owes a special allegiance to the professional group and company. Of course, all people have multiple loyalties.

Professors, for example, have loyalties to their families, universities, professional organizations, countries, and so on. Generally, they are capable of placing these loyalties hierarchically, based on their values. A particular professor, for instance, might have a greater sense of loyalty to her university than to the professional organizations of which she is a member, such that if these two parties made competing and mutually exclusive demands on her, then those associated with her university would take priority. As with role responsibilities and values in general, conflicting loyalties can, thus, usually be resolved. A problem occurs when the demands for loyalty by two parties are absolute and they conflict. In a situation such as this, the professor would have two absolute duties and be unable to fulfill both of them. Conflicting loyalties can, therefore, create moral dilemmas for engineers, which they have to resolve in the absence of preexisting priorities:

- To whom should engineers have greater loyalty, the public or their employers? Justify your answer.

9.3 THE LEGITIMATE AUTHORITY OF EMPLOYERS

As mentioned before, the roles of employers are different from those of clients: clients hire engineers to complete very specific tasks, and engineers generally decide how to carry out these tasks, receiving agreed-upon fees for the completion of these tasks. By contrast, employers hire engineers for generalized roles, where specific assignments arise throughout employment rather than only prior to it, receiving salaries. If someone is hired as a mechanical engineer by a company, for example, that person can be assigned to work exclusively as a mechanical engineer or on a variety of engineering projects, but not to make coffee. The authority of an employer over an engineer is, thus, based on the conditions in terms of which the engineer was hired. These conditions are often established through an employment contract.

In contracts, the duties of an employee to a company are outlined, as well as the wages the company will pay the employee for carrying out these duties. To be fair, the contract should be established in an agreement between equals. In reality, however, this is rarely the case. To a large extent, agreed-upon conditions depend on alternative employment opportunities, employment location, financial pressures, and so on. More often than not, companies will be in positions of greater power than potential employees and, thus, able to dictate coercive employment conditions. This can be especially true with younger engineers or those just beginning their careers. The notion of legitimate authority,

therefore, becomes important in cases such as these: those in positions of authority are able to give orders, but engineers are not always obliged to follow all such orders.

As mentioned previously, exercising legitimate authority consists in giving orders to subordinates that would be considered "legitimate," the basis of which would be the contract to which the employee freely agreed. Further, companies cannot engage in unethical activities. Signing an employment contract to work for a criminal organization, for instance, illegitimizes directives the boss of such an organization would give. Even when employees have signed employment contracts, however, the legitimate authority of employers is still limited. Companies cannot violate the basic rights of employees, for example, the right not to be discriminated against. These need not—and generally will not—be stated in employment contracts. Again, employment contracts cannot require employees to do anything unethical, and it can be argued that demands by employers cannot be unreasonable.

Engineering employees are in special situations, since they are professionals. Employers possess authority based on their institutional positions, while engineers possess authority based on their expertise. Again, this means that engineers are required to exercise independent judgment.

9.4 FAITHFUL AGENCY

If companies exercise only legitimate authority, then, in turn, employees have duties to companies; they are compensated for doing what they agreed to. Duties of employees, therefore, consist in following through on the legitimate directives of employers. Performing assigned tasks in an "acceptable fashion" or "well" is related to this broader duty. Again, the criteria of acceptability vary from situation to situation, and specifying conditions under which tasks would be completed well can be difficult. One might claim that a job done well is simply one that meets the expectations of an employer, but these expectations could be unreasonable. Perhaps a more fruitful approach would be one that characterizes the motivations that should govern the performance of employees.

While employed by a particular company, the primary duty of an employee is to that employer. In essence, employers purchase the time and skills of employees. Thus, employees have obligations to contribute to the goals of the companies for which they work, putting these goals before those of mere self-interests. This relation is known as one of "faithful agency." Employees have obligations to act as faithful agents of the companies employing them: in working for employers, employees should be devoted to the needs and interests of the employers. If employees do so, then they will generally be performing their jobs well. (Unless, of course, they are incompetent in other regards—as discussed in Chapter 4, competence is a requirement of professional engineers.) Loyal engineers can, thus, usually be considered to do their jobs well—in other

words, loyalty is a condition of a job well done. Again, however, compared with other employees, engineers are in somewhat special positions.

Engineers also have a duty of loyalty to the public, insofar as they are special protectors of public safety, health, and welfare. Thus, for engineers, situations of conflicting loyalties can arise, where loyalties to employers and loyalties to the public conflict. Some have argued that this would not be a real conflict: in protecting the public from potential harms by companies, engineers protect companies from potential liabilities.[101] Consequently, in protecting the public from companies, engineers are also acting loyally to the interests of their companies. Others have argued that loyalty to the public should always come before loyalty to companies, as was discussed in Chapter 6. Still others claim it is the other way around.

In his provocatively titled "I'm Not That Hungry—Yet!," Richard Mayer, an engineer, argues that the duties engineers have to their employers should override their loyalties to the public: "An engineer employed in industry may give the appearance of professionalism, such as authority and responsibility for failure, but these are internal to the company structure. He has no real relationship with the external customer or the public, nor actual responsibility for the outcome. He is not ultimately responsible, for he is not free to exercise independent judgment. He is an employee, paid by the company, and he is responsible to it alone. It is the company's reputation and profit that are at stake, not his own" (Mayer, 1977).

Mayer goes on to frame this claim in terms of faithful agency: "The proper role of the engineer in industry is that of the 'good and faithful servant.' He can bring to the assignment his best skills, but not professional independence, for responsibility cannot rest both with the engineer and with the company. This, of course, was the engineer's own choice—to trade his skills for security. While others served their additional apprenticeship to the public, he was drawing a paycheck. He did not enter practice; he got a job. We need both employed and professional engineers, but one cannot have it both ways" (Mayer, 1977).

- As outlined in the text, some argue that there is not a conflict of interests between loyalty to a company and loyalty to the public, that "in protecting the public from potential harms by companies, engineers protect companies from potential liabilities." Do you agree with this claim? Why or why not?

9.5 CONFLICTS OF INTERESTS

In framing his claim for faithful agency, Mayer points toward a duty engineers have to avoid conflicts of interests: acting autonomously, based on their duties to the public, can place engineers in situations of conflicting interests with their

101. For an example of this position, see Vandekerckhove and Commers (2004).

employers. Conflicts of interests can occur when the judgments or actions of engineers on behalf of employers or clients are endangered by other interests or commitments, for instance, those to family, country, themselves, alternative potential clients or employers, or their professional roles. When engineers allow these to override their primary duties to employers, one could claim that engineers are disloyal. Loyal employees should avoid conflicts of interests.

Philosopher Michael Davis has characterized three different types of conflicts of interests: (1) actual—when the interests of employers are certain to be negatively affected, for example, an employee selling proprietary information to a competitor; (2) latent—when there is a reasonable chance that the interests of employers will be negatively affected, for example, an employee working under the direct supervision of a close friend or family member; and (3) potential—when one can reasonably foresee that the interests of employers might be negatively affected, for example, an employee taking an intensive, second job. Some of these conflicts, Davis notes, cannot always be avoided. As a solution, he proposes full disclosure to employers and consent by employers to the conflicts.[102]

Examples of situations where conflicts of interests can occur include, but are not limited to, when engineers have second, part-time jobs, use information learned at their employers for personal gain, are offered gifts or bribes, or show favoritism in hiring/subcontracting work. None of these situations require that actual conflicts of interests occur, although they are all sources of possible conflicts. Additionally, from an outside perspective, it is not easy to determine when conflicts of interests are occurring.

In the case of gifts, for example, the following questions would need to be considered: how much is it worth? Why is the gift being given? How is it presented? What are the positions of the giver and recipient of the gift, respectively? What are the company policies? What are the common practices within particular industries regarding giving and receiving gifts? Receiving a gift worth $50 might bias the judgment of one engineer, for instance, whereas $5,000 might bias the judgment of another. This is one of the reasons that conflicts of interests are the sources of such intense ethical debates. However, the distinction between actual and apparent conflicts of interests somewhat simplifies matters: even if the judgments of engineers are not negatively influenced, to an outsider, they might appear to be. From the perspective of corporations, this situation can be just as bad as a real conflict. One might thus argue that engineers should avoid situations not only that result in *actual* conflicts of interests but also that have the potential to result in *apparent* conflicts of interests.

Engineers need to handle dealing with both actual and potential conflicts of loyalties, duties of loyalty to employers and the public. This raises the question of dissent within corporate environments—if, when, and how to disobey orders.

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102. For more on this, see Davis (1998).

CASE STUDY TWO—THE CASE OF LARRY SAPPORO: CONFLICTS OF INTEREST?

Read through each of the following hypothetical scenarios. Take a few minutes to respond to the issues posed after each section, mentioning any potentially relevant ethical principles to justify your answers.

Larry Sapporo has been working as a chemical engineer for Plesticine Corporation for the last 5 years, since he graduated from university. When Larry began working for the company, he signed an industry standard nondisclosure agreement, agreeing not to reveal proprietary company information. Although Larry has contributed significantly to the company, his career with Plesticine seems to have reached a plateau. He has not been promoted to a managerial position since he joined the company. Larry is ambitious and hopes, someday, to move into a leadership position at a major company. To move toward this goal, Larry believes he should exhibit leadership qualities, although, unfortunately, such opportunities at Plesticine have been few and far between. One day, Larry receives a call from a representative at Lysotane Corporation, a company in the same industry as Plesticine. The representative indicates that he has heard rumors that Larry might be interested in changing jobs. Lysotane currently has a job opening for someone like Larry, one that would consist in leading a development team for new products. The position would pay approximately twice as much as Larry's current salary, and his benefits would be negotiable:

1. Should Larry speak with his current employer before engaging in further discussions with Lysotane?
2. Should he be suspicious of job offers from companies competing with Plesticine?
3. Should Lysotane refrain from attempting to hire away engineers from their competitors?

Larry decides to accept the position and begins working at Lysotane. In his first assignment, Larry realizes that one of the chemical processes he used at Plesticine could be used to develop a new product for Lysotane. This product would not compete with those produced by Plesticine. Larry learned of the theory behind this process while studying at university, although never heard of its being used anywhere except Plesticine. Larry does not know whether Plesticine would consider this process to be proprietary information:

1. Should Larry use this process at Lysotane, since he learned the theory behind it in college?
2. Is his knowledge of this process part of a general engineering knowledge constituting his experience base?
3. Should Larry use this process, since the product for which it would be used to produce would not compete with ones produced by Plesticine?
4. Should he consult Plesticine, to see whether the company considers this process proprietary?

Larry incorporates the process into the design of the new product, and Lysotane makes plans for production. Having completed this task in his first 6 months, Larry is assigned to lead another team in the development of a different product. Plesticine's most successful product is Garbonzo. His superiors tell Larry that Lysotane needs a product to compete with it. When he was at Plesticine, Larry worked on the development of Garbonzo. Since Garbonzo was already a "mature product," this was part of the reason that he was unsure of his future at Plesticine—there was little room for innovative development:

1. Should Larry agree to work on the development of a product that directly competes with Garbonzo?
2. Should he consult Plesticine before doing so, seeking out information regarding the parameters of proprietary information regarding the knowledge he would use to develop a product that would compete with Garbonzo?

Larry accepts the assignment, but work comes along very slowly. He cannot develop an alternative product with the same quality as Garbonzo. At this point, Larry is tempted to use a process he learned at Plesticine, although he knows that Plesticine has explicitly designated this process a trade secret:

1. To which organization does Larry owe greater loyalty, Lysotane or Plesticine?
2. If he can ensure that Plesticine will not discover his actions, then should Larry use the process he learned there to develop a product for Lysotane to compete with Garbonzo?
3. Do his obligations to Plesticine cease once it stops paying him?

Larry decides not to use the process, although his superiors at Lysotane keep pressing him for results. Given how much he learned during his time at Plesticine, his superiors hint to Larry that he should really be able to do more to develop a competitive product. Finally, they directly tell him that the only reason he was hired by Lysotane is because of the knowledge he acquired at Plesticine. His superiors tell Larry that if he fails to use this knowledge to develop a product that can compete with Garbonzo, then he will lose his job at Lysotane.

Unfortunately, since Larry moved to Lysotane, the job market for chemical engineers has become quite bad, and he has no prospects of alternative employment. To make matters worse, one of his children requires major medical work, which Larry can only afford to pay with his employee insurance plan:

1. To what extent is Larry's current predicament the result of his earlier decision to take the position at Lysotane?
2. Should Larry give up his job at Lysotane?
3. Does he have an obligation to do whatever is necessary to ensure his child's medical problems are handled?
4. Should Larry tell Plesticine what Lysotane is attempting to do?

9.6 ENGINEERS AND DISSENT

Based on previous considerations, engineers might have to decide if and how to dissent from hierarchical directives—to circumvent corporate chains of command. In relation to cultural practices, Chapter 7 addressed one form of dissent: "Engineers should endeavor to refuse to participate in engineering activities which are claimed to reflect cultural practices but which violate the general ethical principles of engineering." The application of this principle is limited to situations in which ethical considerations compete with nonethical ones, however, thereby relying on the more fundamental status of ethics—in terms of behaviors that have the potential to seriously impact the lives of others. Situations of dissent being considered here are more problematic, since they touch on competing ethical claims—duties of loyalty to the public versus employers.

Dissent in corporate environments can take different forms, consisting in any one of the following: disagreeing with a superior, either orally or in writing; refusing to carry out the directives of a superior; going above a superior, to a superior's superior; or revealing internal information to external individuals and/or organizations. The last of these is generally known as "whistle-blowing" and is the most serious. For this reason, it will serve as a model for dissent: important considerations with regard to whistle-blowing also apply to other less serious forms of dissent, to lesser degrees. Given the seriousness of whistle-blowing, it should be mentioned that the majority of engineering ethical issues will not require contemplating dissent within corporate hierarchies.

9.7 ENGINEERS AND WHISTLE-BLOWING

Whistle-blowing is a complex and disputed topic, with concerns revolving around its nature and consequences, organizational structures and ways to minimize the need for whistle-blowing, requirements for its implementation, motives of whistle-blowers, and so on. Whistle-blowing always involves conflicts of loyalties, which the philosopher Sissela Bok describes as follows: "loyalty to colleagues and to clients comes to be pitted against loyalty to the public interest, to those who may be injured unless the revelation is made. Because the whistle-blower is an insider in the very organization he criticizes, his act differs from muckraking and other forms of exposure by outsiders, as when reporters expose corruption within a governmental agency. Such acts are expected, sometimes even required of outsiders, and do not produce in them the same conflicts of loyalty" (Bok 1980).

To begin, it is necessary to articulate a definition of whistle-blowing suitable for engineering. It can be defined as follows: *the violation of a corporate hierarchy to make known a clear danger or problem in an organization that is likely to cause serious physical harm to the public*. Based on this definition, it is possible to distinguish between two forms of whistle-blowing, internal and external.

Internal whistle-blowing occurs when a hierarchical chain of command within an organization is broken, such that immediate supervisors are bypassed, perhaps because they have refused to act or have themselves been involved in wrongdoing. External whistle-blowing occurs when information internal to an organization is shared externally, perhaps with regulatory agencies, the press, or public. The philosophical literature often restricts the use of the term to external whistle-blowing, although the media typically uses the term in both senses. A further distinction can be made between open and anonymous whistle-blowing.

In the first form, whistle-blowers reveal their identities, while in the second, they remain unnamed. Studies have shown that anonymous whistle-blowing is less effective, since it is easier to ignore, and no follow-up with the whistle-blower is possible. Organizations have also been willing to devote significant resources to discovering the identities of anonymous whistle-blowers. This is relatively easy since only a limited number of individuals would typically have access to the kinds of information revealed. Whistle-blowers often want to hide their identities, since they almost always suffer due to reprisals from organizations or colleagues.

Finally, it should be mentioned that whistle-blowers need to be insiders—either currently or formerly associated with the organizations on which they blow the whistle. Otherwise, they might be spies, reporters, or moles, but not whistle-blowers. As mentioned above, this is due to the fact that whistle-blowing involves conflicts of loyalties—between duties of loyalty to organizations and those to the public or other principles. For those who infiltrate organizations, no such duties of loyalty to these organizations exist:

- Whistle-blowing is defined here as "the violation of a corporate hierarchy to make known a clear danger or problem in an organization that is likely to cause serious physical harm to the public." In your opinion, what constitutes serious physical harm? Is whistle-blowing justified when the harm is financial or emotional rather than physical? Why or why not?

9.7.1 Criteria for Whistle-Blowing

The philosopher Richard DeGeorge is responsible for one of the most influential discussions of whistle-blowing. He outlines five conditions according to which whistle-blowing would be either morally permissible or morally required. Reviewing these criteria allows for further insights into the nature of whistle-blowing. The first three conditions establish the permissibility of whistle-blowing, and the last two its necessity. From a moral point of view, whistle-blowing is permitted if

1. serious harm will be done to the public;
2. the employee makes his or her superiors aware of the problem;
3. the superior does nothing and the employee exhausts the corporate hierarchy.

If an engineer blows the whistle after these steps have been unsuccessful, at some cost, then whistle-blowing is morally permissible. According to DeGeorge, an act such as this deserves praise, but a failure to blow the whistle

in a situation such as this would not deserve moral blame. However, whistle-blowing becomes morally obligatory if two additional conditions are met:

4. The whistle-blower has documentary evidence available, which would convince an objective observer.
5. It is very likely that, as a result of the whistle-blowing, the problem would be solved.

The primary focus of DeGeorge's account of whistle-blowing is on the effectiveness of whistle-blowers—how effective it is in keeping the public safe. He does not consider the consequences to whistle-blowers to be a significant factor—how whistle-blowers will be affected by their actions. DeGeorge recognizes that although engineers may become public heroes for whistle-blowing, their colleagues will most likely consider them traitors—perhaps because whistle-blowers serve as reminders of their own moral failings. In general, the literature is full of examples of the fates of whistle-blowers. Although willing to list whistle-blowing as a potential requirement, professional societies have not always stood behind whistle-blowers. This is irrelevant, according to DeGeorge, if the potential harm is great enough.[103]

Due to the serious consequences associated with whistle-blowing, however, most stress that it should be an avenue of last resort.[104] Many recent discussions have emphasized ways to avoid whistle-blowing, such as setting up ethics offices within organizations, fostering open-door practices, articulating clear organizational policies, and appointing ombudspersons—officials who mediate employee grievances with management.[105] These alternatives are emphasized because whistle-blowers often become the targets of subsequent investigations, rather than the misconduct revealed by the whistle-blowing.

Within organizations, the consequences for whistle-blowers are so universally negative—including shunning by colleagues and formal and informal organizational reprisals—that whistle-blowing can legitimately be considered an act of moral heroism. As such, it is unclear that whistle-blowing should be considered a moral requirement, as has been the case with engineers in particular. While technical professionals often possess more information than others, the possession of this information alone does not establish a duty to blow the whistle. Moral heroes should be applauded and rewarded, as occurs through various governmental incentive schemes.[106] However, singling out individuals—demanding they sacrifice their careers and suffer other detrimental consequences for the common good, to avoid charges of moral misconduct—is debatable.[107]

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103. For a fuller account of DeGeorge's position with regard to whistle-blowing, see DeGeorge (1999).
104. Regarding the consequences of whistle-blowing, see Lubalen and Matheson (1999).
105. For examples of these discussions, see Dandekar (1991), Davis (1989), and Gunsalus (1998).
106. For example, see Callahan and Dworkin (1992) and Castellina (2011). For a comparison of these schemes and their European counterparts, see Fleischer and Schmolke (2012). For more on European whistle-blowing schemes, see also Huttl and Lederer (2013).
107. For a fuller discussion of whistle-blowing in general, see Luegenbiehl (2005) and Martin and Schinzinger (2010) and discussions of particular issues related to whistle-blowing in Davis (1983) and Martin (1992).

The issue then is whether whistle-blowing is an act that can be ethically required of engineers under certain circumstances. As with the overall approach here, this is an issue that should be resolved with regard to individual cases. The following is an overview of reasons given in opposition to and favor of whistle-blowing:

In Opposition to Whistle-Blowing

- It is the action of a traitor who will hurt organizations and their employees.
- Whistle-blowers position themselves as morally superior to those who did not act.
- Engineers owe their greatest loyalties to the organizations for which they work.
- Whistle-blowing is often motivated by reasons that have little to do with public safety.
- Whistle-blowers could be mistaken, thus causing unnecessary harm to organizations.
- Whistle-blowers could destroy their careers.
- Engineering organizations might not support whistle-blowers.
- Engineers should not be held responsible for the actions of others.

In Favor of Whistle-Blowing

- The greatest professional duty of engineers is to the public and its safety.
- Great harm can be done if such wrongs are not corrected.
- Engineers have a right to free speech.
- The public will admire engineers as heroes.
- As members of organizations, engineers share in the responsibility of actions taken by those organizations.
- Engineers have the greatest amount of technical knowledge and, therefore, can make the most convincing case to the public.

- Should engineers be held responsible for the actions of others within their organizations? Why or why not?
- Do you agree that whistle-blowing should be considered an act of "moral heroism"? Why or why not?

CASE STUDY THREE—THE CASE OF GEORGE KIRIN

Read through each of the following hypothetical scenarios. Take a few minutes to respond to the issues posed after each section. In answering these questions, refer to ethical principles discussed in previous chapters and criteria for whistle-blowing reviewed in this chapter to justify your answers.

George Kirin works as a design engineer for a second-tier automobile manufacturer, the Multiple Automobile Assembly Corporation (MAAC). He is an experienced engineer, 12 years out of university, who has worked in a variety of design positions for three different companies in the industry. His work has been highly regarded by all of his employers.

George is currently working with a team responsible for the design of the rear-end brake assembly of a new, highly fuel-efficient model that MAAC hopes to introduce in less than two years. Code-named "Springboard," the company is pinning its hopes of "leaping" from a second- to first-tier automobile manufacturer on this model. If it fails, then MAAC will be relegated to hanger-on status, perhaps even bankruptcy.

If nothing else, George is an extremely conscientious engineer. He has been performing extra tests outside the scope of his assignment and has discovered what he thinks is a flaw in the overall rear-end design of the car. Under certain conditions, this flaw will cause the brakes to malfunction:

1. Should George be undertaking design tasks aside from those assigned to him?
2. Is he acting in a manner similar to most responsible engineers?

George decides to inform his superior of the problem. His supervisor, Colleen Keystone, tells him that the issue is outside the scope of the design assignment of their department. When George reiterates his concerns, Colleen tells him she will review his data.

Several weeks later, after repeated inquiries by George, Colleen calls him into her office for a meeting. She explains to him that her examination of his data indicates that the design is acceptable at present. In talking with her, George is unconvinced Colleen has carefully examined the problem in relation to the overall rear-end assembly design:

1. Is George exhibiting sufficient respect for Colleen's judgment?
2. Is her perspective on the responsibilities of design engineers too narrow?
3. At this point, should either George or Colleen alert upper-level management of the problem?
4. Are there problems with the design process of MAAC?

After a greater deal of reflection—and additional tests that seem to verify his initial concerns—George decides to send a memo to the head of the whole design team, Sammy Adams, listing and justifying his concerns. He does not receive a memo in reply, but approximately a month later, George receives a call from Sammy telling him to drop the matter.

When George presses the issue, he is told that while a potential problem does exist, fixing it at this stage would delay the project, to the point that the model of another major company would beat theirs to market. This delay would prevent MAAC from gaining sufficient market shares with their new model, killing the company. If the project goes ahead as planned, however, then the company would be able to address any potential liability claims with profits from the new model. Sammy tells George that he needs to understand the business realities facing their company and that MAAC has considered all available options:

1. In your opinion, has George followed appropriate procedures in communicating his concerns? Why or why not?
2. Is Sammy trying to cover up the problem?
3. Should MAAC be primarily concerned about its survival?

At this point, George asks for permission to examine the matter further, forming a small team to look into additional options. He is given permission to do so. However, the only option George and his team discover, which would fit into the current timetable, would significantly lower the fuel efficiency of the car. When he reports these results, George is told that this is an unacceptable option:

1. Is the fuel efficiency of a car as important as its brake system?
2. Should George cease work on the design of the brakes?
3. If MAAC refuses to change the design, then should George make his concerns public?

The car goes into production on schedule and is extremely successful. Very soon, however, the company becomes aware of isolated instances of malfunctioning brakes, which are handled through warranty procedures. During the first year, out of the approximately 260,000 units sold, 130 cases of brake malfunctioning are reported. In the meantime, George has been working on another project and is unaware of these statistics.

Finally, just over a year after the car was introduced, a sensational case occurs: the loss of brakes is the apparent cause of one of the cars smashing into twelve elementary school children, killing eight of them. George first hears about the case on the news and then follows the story closely. Litigation against MAAC begins with lawsuits in excess of $800 million. MAAC takes the defensive, claiming the brake failure was an anomaly isolated to that particular car, neither a design nor a manufacturing problem. The company blames the driver for the collision.

In the meantime, George has obtained failure data on other cases from Steve Johnson, a friend working in another division of MAAC. Steve has shared this data with George, despite a company policy prohibiting the interdivisional sharing of information without proper authorization:

1. Should MAAC have issued a recall on the brakes before the school children incident?
2. Should Steve have given the data to George?
3. Is either MAAC or George responsible for the deaths of the school children?
4. Should George share the data he has obtained with the plaintiffs suing MAAC?
5. Should George contact the media and reveal what he knows about the design procedure?

EXERCISE TWO—THE CASE OF JOHN'S FRIENDSHIP (PART TWO)

Refer again to the case of John's friendship at the beginning of this chapter. Answer the following questions, where relevant, mentioning the criteria for whistle-blowing to justify the answers you give:

1. Should John's friendship affect his actions? Why or why not?
2. Should his employment with CCC affect John's decisions? Why or why not?

3. What actions should he take, if any? Which actions would be wrong for John to take?
4. What if he takes actions, keeping the matter within the company, and they are ineffective. What should he do?

9.8 SUMMARY

Given the many duties of engineers—based on their professional expertise and the roles they occupy both personally and professionally—the fact that these potentially conflict is unsurprising. This chapter more fully examined the nature of these conflicts and how to avoid or resolve them. If engineers have a responsibility to exercise professional autonomy for the sake of public safety, then they should be allowed to do so. At times, however, this can put engineers at odds with hierarchical authority. Engineers have a duty of loyalty to the organizations in which they work, assuming organizational directives are based on legitimate authority. Engineers should act as faithful agents of the companies for which they work: doing a good job as an employee consists in a relation of faithful agency, taking on the interests of the organization as one's own. Such a relation involves avoiding apparent, potential, and actual conflicts of interests. At times, however, engineers might find themselves in situations where they should dissent from hierarchical authority and directives. The most serious form of such dissent is "whistle-blowing," which can occur in a number of ways. Given the negative consequences for both organizations and engineers that can result from whistle-blowing, it should be a last resort, occurring only once certain conditions are met.

REVIEW QUESTIONS

1. Describe three characteristics/conditions of loyalty. Additionally, explain duties of loyalties engineers have and how these can come into conflict.
2. Define "legitimate" authority and describe three situations that would illegitimize the authority of an employer. Why is this concept important for engineers?
3. Describe the difference between actual, latent, and potential conflicts of interest and give examples of each.
4. Define whistle-blowing, explaining its relationship to loyalty in the process.
5. List and describe three conditions outlined by Richard DeGeorge that, if fulfilled, make whistle-blowing morally permissible and the additional two conditions that make it morally required.
6. Describe forms of dissent in corporate environments and the relationship between autonomy, dissent, and whistle-blowing and why these notions/actions are relevant to employed engineers.
7. Are engineers different from other professionals in their relation to their employers? If so, what are some of these differences?
8. Describe the nature of internal versus external whistle-blowing, giving examples of both.

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