The Civilized Engineer

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Loyalty, Or Why Engineering is Sometimes Like Baseball

“What should I do if I am assigned work that I think is not in the best interest of society?” The young man who asked me this question was an engineering student soon to graduate and embark on a career. He was frowning and looked deeply troubled. Even in this time of conservative self-interest, I have met a number of young engineers with similar misgivings.

When I was in school we didn’t worry about such matters. We had concerns aplenty, but they were of a different kind: What sort of work did we want to do? What were we good at? How could we best achieve success, whatever that was? As for loyalty, it never occurred to us that conflicts could arise. We assumed that an engineer was loyal to superiors, colleagues, and clients, and that service to the community came naturally as the result of a job well done.

Today, in the wake of the environmental crisis and widespread doubts about technology, such a view smacks of insensitivity. If engineering projects can turn out to be harmful—to the environment, say, or to public safety—then it appears possible that one’s professional work might run counter to one’s obligation to society. Which gives rise to the question put to me by the frowning student.

I did not think it appropriate to launch into the arguments to which I have devoted the past several chapters. This young man was thinking intently about his own personal future and his own very personal feelings. After a moment’s thought, I assured him that he was unlikely to encounter the moral crisis he feared. I could say this with some confidence because every engineer I have ever met has been satisfied that his work contributes to the communal well-being, though admittedly I had never given much thought to why this should be so. As I pondered the question, reflecting on the way most people manage to blend personal morality with loyalty and commitment, I found myself thinking—of all things—about the trade of Eddie Stanky.

In the late forties Eddie Stanky played second base for the then Brooklyn Dodgers. He lacked outstanding talent but was known as a great competitor. He was feisty and inventive. He was particularly adroit in reaching first base by managing to be hit with pitched balls. One day I was horrified to learn that this dirty player, this bad sport, had been traded to the team I rooted for, the New York Giants. But then a strange thing happened. Once he was playing for my team he seemed morally reformed. We Giant fans no longer called him a bad sport or a dirty player. He was spunky little Eddie. He was clever little Eddie. He was resourceful little Eddie. That was one of my earliest lessons in the relativity of ethics.

I told my questioner about this experience. It may seem frivolous to compare such an incident to the moral dilemmas of engineers, but I think the analogy is worth considering. Is it not true, at work or play, that we instinctively root for the home team? Of course, we do not condone real knavery; but we tend to view our own cause in a favorable light. An engineer who works for Exxon feels differently about offshore drilling than he would if he were employed as town engineer for a seaside resort. This has less to do with good and evil than it does with where one stands at a given moment. The petroleum engineer feels that he is called upon, both by his company and society as a whole, to provide an adequate supply of oil at a reasonable price. The town engineer is responsible for the well-being of the people who rely upon him to keep their community safe, clean, and prosperous.
Obviously an engineer's attitudes are in some measure formed by his assignment. Not every project need be exactly to his taste (as I argued in Chapter 7), but on the job he will likely find his fellow workers to be, by and large, decent people with whom he will want to join in common cause. From the outside, Exxon may appear to be a giant, heartless corporation obsessed with making profits. From the inside, Exxon doubtless is perceived as an association of earnest individuals working hard on constructive projects. "Groupthink" is a well-documented phenomenon from which none of us is immune.

"But isn't this bad?" the troubled student asked. "Not necessarily," I replied. Nobody wants a professional to pledge blind allegiance to an employer or a client, but since the sine qua non of accomplishment is effort, society is clearly well served if most people approach their work with zest—even if the zest is founded in something as apparently trivial as team spirit.

The student and I did not have time to pursue the discussion further. Later, however, I wondered if my answer had not rung hollow. After all, the classic response in such an encounter has always been "To thine own self be true." Yet I could not persuade myself that this was what one ought to stress to a young person preparing for a first engineering job.

In addition to enthusiasm, the good work that assures communal well-being requires order and cooperation. Any group of people undertaking a complex task must establish an organizational structure. Without assigned responsibility—without discipline—large-scale technological enterprise is unthinkable. Accordingly, a young engineer will have to temper any personal misgivings, such as they are, with an awareness of the group's needs for order. This may sound slightly unsavory, but only until it is considered in depth. Our daily lives teach us to live with disappointment. Our particular point of view cannot always, or even usually, prevail. In politics we learn to accept this and proudly call it democracy. We do what we can to influence the tide of events without being excessively disruptive. It is called working within the system.

Indeed, the system seems to work best when different groups, each energetically pursuing its own goals, clash and are obliged to resolve their differences. The term "healthy competition" has become a cliche, but it expresses a profound truth. Competition is healthy—ecologically, politically, and, of course, technologically. Our society's strength stems in no small measure from its multiplicity of often conflicting institutions: corporations, labor unions, bureaucracies, universities, trade associations, charities, foundations, political parties, and public interest organizations (which often more accurately could be termed "private interest organizations"). In this respect the body social reminds me of the human body, in which health is maintained by a variety of defense mechanisms: antiseptic fluids, white blood cells, the lymphatic system, and an incredibly complex chemical immune system.

Society's interests are better served, I believe, by the resolution of conflict between organizations than by the disaffection of individuals within organizations. Let oil companies search for oil—not recklessly, without care and common sense—but enthusiastically, without the kind of inner dissension that results in paralysis. Let the rest of us establish the limits beyond which we do not want the oil companies to go. And let the same process apply wherever technological progress impinges on other values that society holds dear—particularly public safety and environmental quality.

When engineers are loyal, each to his own organization, the system works and the public is served. But more is involved than efficiency. The quality of communal life depends upon the trust and respect that prevails among families, friends, and coworkers. An abstract devotion to "the good of humanity" is no substitute for devotion to real human beings. Out of fruitful personal relationships comes the decency that sets the moral tone.
for the good society. A sociologist who interviewed hundreds of workers once told me that what Americans love best about their jobs is the social milieu in which they spend their days—the relationships they establish with their colleagues. The Japanese have developed a sense of group harmony far beyond what we Westerners can, or care to, cultivate. But even in our individualistic society, mutual loyalty and good faith in the workplace is a key to personal happiness, and productivity as well.

Unfortunately, since the 1950s the concept of loyalty has been tarnished by too many loyalty oaths and abusive demands for conformism, just as the concept of patriotism has been sullied to the point where the term is on the verge of becoming pejorative. The problem is as old as humanity: how to balance the rights of the individual with the needs of the group.

I do not advocate unthinking obedience to the group, obedience of a sort that was confronted and discredited at the Nuremberg trial of war criminals. And I do not say that whistle-blowing is never justified. It is, occasionally, not only justified but necessary and heroic. However, one cannot endorse—except in the most exceptional circumstances—the betrayal of one's companions for some "greater good." Ayatollah Ruhollah Khomeini urges students to spy on their teachers and classmates and to secretly tell security forces about those whose dedication to Islamic values is in doubt. This is whistle-blowing of the worst kind, the other end of the spectrum from Nazi-type loyalty. Between the distasteful extremes of betrayal and servility each individual must make his own way. Happily, the need for engineers to make such choices is, to my best knowledge, exceedingly rare.

If I were able to resume my discussion with the troubled young engineer, I would urge him to embark upon his career with great enthusiasm and not be overly apprehensive that his work might harm society. Naturally, he must follow his own star, but to a certain extent he has done this already by choosing to be an engineer, a professional who must work with others, rather than, for example, choosing to be an artist, who can work alone. There are still personal decisions to be made. If he is averse to armaments or nuclear power, by all means let him steer clear of these fields. If he is an ardent environmentalist, let him seek work in that area. But once engaged in an engineering task, let him put his whole heart into it. He can maintain his values and sense of self without indulging his ego at every turn. If he wants to serve society, let him do good work.

What if, in spite of the enormous odds against it, he does encounter base practices and experiences a crisis of conscience? Loyalty to the group will require that he come down on the side of legality and prudence. No assemblage of engineers is well served by deception. And if the very worst should happen—if he becomes involved in a situation that cannot be honorably resolved within his organization—then, speaking as a member of society, I would rather count on the righteous wrath of an engineer whose loyalty has been betrayed than on the pique of an engineer who was from the start a suspicious malcontent.

It is a bittersweet paradox that new-fangled technology, because it depends so much upon group effort, should summon forth old-fashioned morality. The American philosopher Josiah Royce, writing at the beginning of this century, spoke of the need for "loyalty to loyalty." The idea is worth reviving in our time.