Engineering Ethics

Lecture – 9: Truthfulness & Trustworthiness

Truthfulness

- The standard of truthfulness in engineering is very high, much higher than in everyday life.
- It imposes what many consider an absolute prohibition on deception, and in addition it establishes a high ideal of seeking and speaking the truth.
- It also generates an array of issues concerning truthfulness in research and academia.

- In everyday life, the exact requirements of truthfulness are often blurry and contested.

- Most of us are deeply offended when others deceive (intentionally mislead) us, especially when they lie (intentionally state what they know is false).

- At the same time, we know of situations that require something less than complete candor, for example to protect our privacy from the intrusive questions of a stranger.

Truthfulness Examples

- The truthfulness responsibility enters often into the cases discussed by the NSPE in its Opinions of the Board of Ethical Review. Here are three examples that the board viewed as violating the NSPE Code of Ethics.

1. An engineer who is an expert in hydrology and a key associate with a medium-size engineering consulting firm gives the firm her two-week notice, intending to change jobs. The senior engineer-manager at the consulting firm continues to distribute the firm’s brochure, which lists her as an employee of the firm.

Truthfulness Examples (Contd.)

2. A city advertises a position for a city engineer/public works director, seeking to fill the position before the incumbent director retires to facilitate a smooth transition. The top candidate is selected after an extensive screening process, and on March 10 the engineer agrees to start April 10. By March 15, the engineer begins to express doubts about being able to start on April 10, and after negotiations the deadline is extended to April 24, based on the firm commitment by the engineer to start on that date. On April 23, the engineer says he has decided not to take the position. (Case 89–2)

- 3. An engineer working in an environmental engineering firm directs a field technician to sample the contents of storage drums on the premises of a client. The technician reports back that the drums most likely contain hazardous waste, and hence require removal according to state and federal regulations. Hoping to advance future business relationships with the client, the engineer merely tells the client the drums contain “questionable material” and recommends their removal, thereby giving the client greater margin to dispose of the material inexpensively. (Case 92–6)

- As these examples suggest, the truthfulness responsibility applies widely and rules out all types of deception.

- Certainly, it forbids lying, that is, stating what one knows to be false with the intention of misleading others.

- It also forbids intentional distortion and exaggeration, withholding relevant information (except for confidential information), claiming undeserved credit, and other misrepresentations designed to deceive.

- And it includes blameworthy failures to be objective, such as negligence in failing to investigate relevant information and allowing one’s judgment to be corrupted.

Trustworthiness

- Engineering, like all professions, is based on exercising expertise within trust relationships to provide safe and useful products.
- Untruthfulness and untrustworthiness undermine expertise by corrupting professional judgments and communications.

They also undermine the trust of the public, employers, and others who must rely on engineers' expertise.

Sound engineering is honest; dishonesty is bad engineering.

Research Integrity

- Truthfulness takes on heightened importance in research because research aims at discovering, expressing, and promulgating truth.
- Research in engineering takes place in many settings, including universities, government labs, and corporations.
- The exact moral requirements vary somewhat, according to the applicable guidelines and regulations, but the truthfulness responsibility applies in all settings.

Honesty in research is about promoting excellence (high quality) in pursuing truth, and this positive emphasis on excellence should be kept paramount in thinking about honesty in research.

An emphasis on quality and excellence in research broadens research ethics to include much more than avoiding fraud.

- Historically, the clear-cut instances of scientific misconduct are intentional violations, as the 19th century mathematician Charles Babbage emphasized.

Categorization of Deception in Research

- ***Forging:*** deception intended to establish one's reputation as a researcher.
- ***Hoaxing:*** deception intended to last only for a while and then to be uncovered or disclosed.
- ***Trimming:*** selectively omitting bits of outlying data—results that depart furthest from the mean.
- ***Cooking:*** his most famous category was a term still used today to refer to all kinds of selective reporting of results, falsifying of data, and manipulating data in the direction that supports the result one prefers.