



ENGINEERING ETHICS & ATTITUDE

Lecture 6.

**TRUTH & WHISTLE-BLOWING
PLAGIARISM & COPYRIGHT**

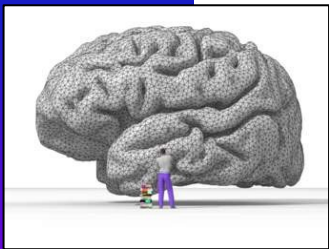
Dr. András Timár

professor emeritus

**University of Pécs, Hungary
Faculty of Engineering and Information Technology
Department of Civil Engineering
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MORAL AUTONOMY

- This is viewed as the skill and habit of *thinking rationally* about ethical issues on the basis of moral concerns independently or by self-determination
- *Autonomous individuals* think for themselves and do not assume that customs are always right
- They *seek* to reason and *live* by general principles
- Their *motivation* is to do what is morally reasonable for its own sake, maintaining integrity, self-respect, and respect for others



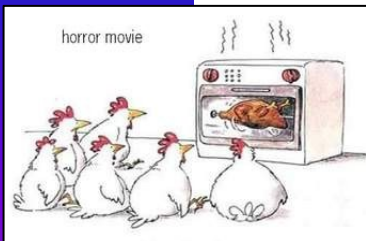
TRUSTWORTHINESS OF ENGINEERS

- **As society is becoming increasingly professionalized, it has become more dependent on the services of professionals whose knowledge and expertise are not widely shared or understood**
- **In its ignorance, the public must place its trust in the reliable performance of engineers, both as individuals and as members of teams of engineers who work together**
- **Thus it is important to focus on areas of moral concern that are especially relevant to the trustworthiness of engineers: honesty & dishonesty, confidentiality, expert witnessing, true communication with the public (among others)**



HONESTY & TRUTH

- **Honesty** refers to a facet of moral character and connotes positive and virtuous attributes such as integrity, truthfulness, straightforwardness; it means being trustworthy, loyal, fair, and sincere
- **Truth** is most often used to mean being in accord with fact or reality, or fidelity to an original or standard
- The commonly understood **opposite of truth** is **falsehood**, which, correspondingly, can also take on a logical, factual, or ethical meaning



FORMS OF DISHONESTY

- A *lie* is a statement that the stating party believes to be false made with the intention to deceive
- Telling and communicating lies is the most common form of dishonesty despite the fact, that there are no circumstances in which one may *ethically* lie
- Even if the *only* way to protect oneself is to lie, it is never ethically permissible to lie even in the face of murder, torture, or other hardships
- Capacity to lie is noted early and nearly universally in human development, but a liar may be subject to social, legal, religious, or criminal *sanctions*



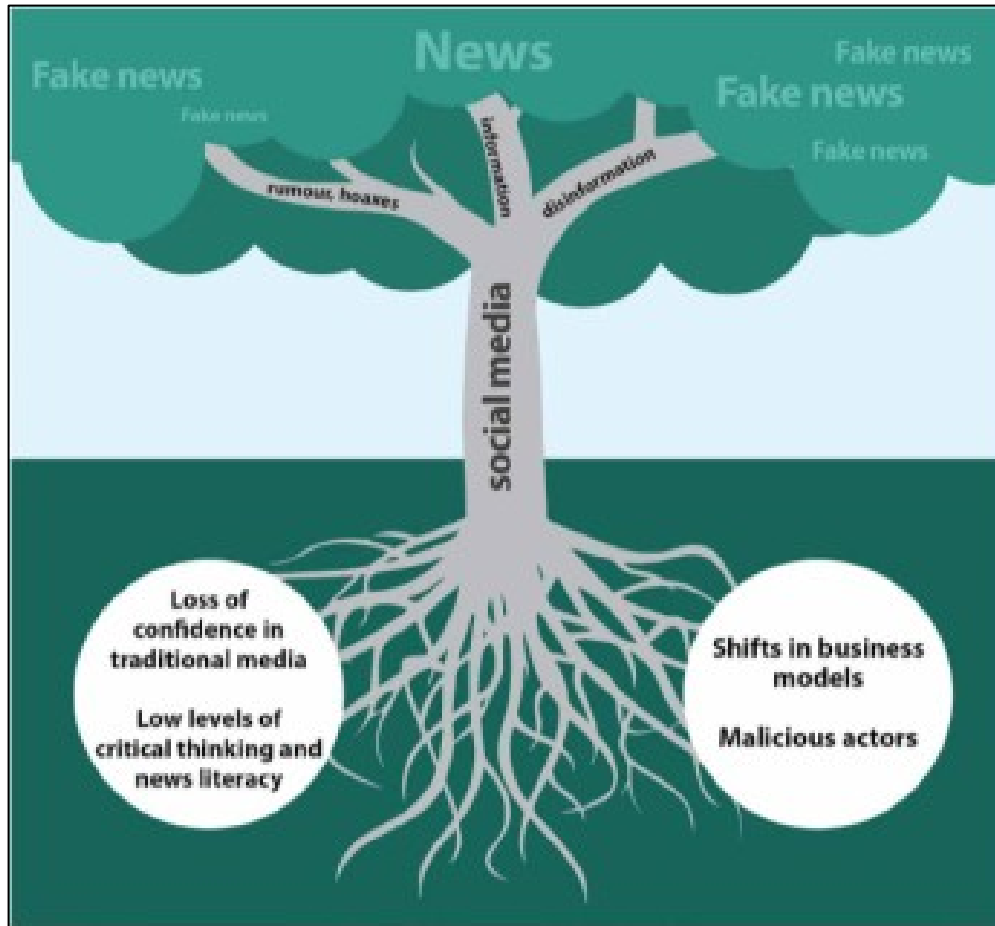
Pinocchio

DELIBERATE DECEPTION 1

- Discussing technical matters in a manner that implies knowledge that we don't have, to impress an employer or potential customer, means engaging in *deliberate deception* even if lies are not communicated
- Arguing in favour of his/her own enterprise, one can *misrepresent* the value of certain products, designs or services by praising their advantages inordinately
- To create an *imaginary reality* by deliberate deception became a real danger in our highly computerised world



DELIBERATE DECEPTION 2



Deliberate deception can have more *disastrous consequences* than telling a lie

DELIBERATE DECEPTION

3

- ***Fake news*** is a form of news consisting of deliberate disinformation spread via traditional news media (print and broadcast) or online social media (Facebook, Twitter, etc.)
- ***Propaganda*** is information, ideas, opinions, or images, often only giving one part of facts and arguments, that are broadcast, published, or in some other way spread with the intention of influencing people's opinions
- They may generate controversy concerning politics (e.g. election processes), creating moral panic or mass hysteria ***damaging public trust*** in democratic institutions



TYPES OF FAKE NEWS

- **Satire or parody ("no intention to cause harm but has potential to fool")**
- **False connection ("when headlines, visuals or captions don't support the content")**
- **Misleading content ("misleading use of information to frame an issue or an individual")**
- **False context ("when genuine content is shared with false contextual information")**
- **Impostor content ("when genuine sources are impersonated" with false, made-up sources)**
- **Manipulated content ("when genuine information or imagery is manipulated to deceive", as with a "doctored" photo)**
- **Fabricated content ("new content is 100% false, designed to deceive and do harm,,)**

OMISSION OR WITHHOLDING INFORMATION

- *Omitting* or *withholding information* is another type of deceptive behaviour
- If an engineer *fails* to to discuss some of the negative aspects of a project under preparation to his/her superior, he/she is engaged in serious deception even *avoiding* to lie
- Cases of dishonesty by omission or by withholding information:
 - Failing to convey information that the audience would *reasonably expect* would not be omitted (at a mandatory public hearing of any big project of civil engineering)
 - In case the *intent* of the omission is to deceive

INFORMED CONSENT

- Engineers have some degree of responsibility to ensure that employers, clients and the general public make autonomous decision,
- Their responsibility is limited, since it extends only to ensure that these decisions regarding technology are made with appropriate understanding, particularly related to their eventual consequences
- If a customer is paying for professional engineering advice and is given misinformation than he/she cannot make a free and informed decision



EXAMPLE 6.

Withholding Information

On 28/01/1986, NASA Space Shuttle **Challenger** broke apart 73 seconds into its flight, leading to the deaths of its seven crew members. Disintegration of the vehicle began after an O-ring seal in its rocket booster failed at liftoff.

The astronauts were informed on the morning of the flight about the ice buildup at the launching pad and were given the option of postponing the launch. They chose not to exercise that option. However, no one presented them with the information about the O-ring behaviour at low temperatures. Therefore they did not give their fully informed consent to launch, because they were unaware of the O-ring related risk.

The incident is a tragic example of the violation of the engineer's obligation to protect informed consent. The fault, however, was not primarily with the engineers but with the managers who supported the launch and did not inform the astronauts of the danger.

WHISTLE-BLOWING

- A day before the launch two engineers employed by rocket booster manufacturer Thiokol pleaded against launching the space shuttle as *whistle-blowers*, but their complaints were dismissed
- *Whistle-blowing* is alerting relevant persons by *revealing the truth* concerning some moral or legal misdemeanor of or within an organization, where “*relevant persons*” are those in a position to act in response
- *Whistle-blowing* is the act of a man or woman who, believing that the public interest *overrides* the interest of the organization he/she serves, publicly “*blows the whistle*” if the organization is involved in corrupt, illegal, fraudulent, or harmful activity



ARGUMENTS AGAINST WHISTLE-BLOWING

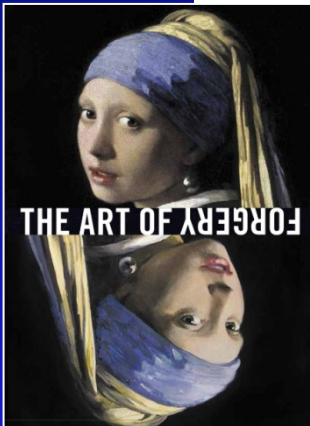
- Some of the *enemies of business* now encourage an employee to be disloyal to the enterprise
- They want to *create suspicion* and disharmony and pry into the proprietary interests of the business
- However this is labeled – industrial espionage, whistle-blowing or professional responsibility - it is another *tactic for spreading disunity* and creating conflict

MORAL GUIDELINES TO WHISTLE-BLOWING

- **It is morally permissible and advised for engineers to engage in whistle-blowing concerning health and safety:**
 - 1. If the harm that will be done by the product to the public is serious and considerable**
 - 2. If they make their concerns known first to their superiors**
 - 3. If getting no satisfaction from their immediate superiors, they exhaust the channels available within the corporation, including going to the board of directors**
 - 4. He/she must have documented evidence that would convince a reasonable, impartial observer that his/her view of the situation is correct and the company policy wrong**
 - 5. There must be strong evidence that making the information public will in fact prevent the threatened serious harm**

DISHONESTY

- *Dishonesty* in science and engineering takes several forms: falsification of data, fabrication of data and plagiarism
- *Falsification/Forgery* involves distorting data by smoothing out irregularities or presenting only those data which fit one's favoured theory and discarding the rest
- *Fabrication* involves inventing data and even reporting results of experiments and tests never conducted
- *Plagiarism* is the use of others' intellectual property without proper permission or credit



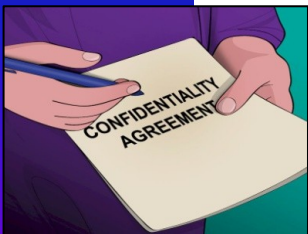
INTELLECTUAL PROPERTY

- Intellectual property results from *mental labour* and can be *protected by law* as trade secrets, patents, trademarks and copyrights
- *Trade secrets* are formulas, patterns, devices or compilations of information that used in business to gain an advantage over competitors
- *Patents* are documents issued by the relevant authorities that allow the owner to exclude others from making use of patented information for a given time
- *Trademarks* are words, phrases, designs, sounds or symbols associated with goods or services



COPYRIGHTS

- Rights to *creative products* such as books, music, graphics, pictures, sculptures, movies and computer software
- The author's estate or heirs *retain the copyright* for a given time (50 years) after his or her death
- Copyrights *protect the expression of the ideas* but not the ideas themselves
- Many companies require their employees to sign an assignment whereby all copyrights of the employee *become the property of the company*, often in exchange of a token fee
- Engineers might find themselves *caught between two employers* with respect to such issues



CONFIDENTIALITY

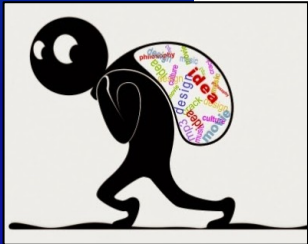
- One can misuse the truth by disclosing it in inappropriate circumstances
- Information may be confidential if it is either given to the engineer by the client or discovered by the engineer in the process of work done for the client
- Using designs, methods, software and other proprietary information of a former employer can be dishonest and may even result in litigation



PLAGIARISM

1

- It is the "wrongful appropriation" i. e. *stealing and publication* of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work
- Plagiarism is considered *academic fraud* and a breach of ethics, it is subject to sanctions
- Plagiarism is *not* defined or punished by law, but rather by institutions (including professional associations, educational institutions)
- False claims of authorship may constitute plagiarism regardless of whether the material is protected or not by *copyright*



PLAGIARISM

2

- **Plagiarism discovered during recent decades destroyed the carrier of politicians and scientists all around the World**
- **Science aims at expanding knowledge through systematic generation and testing of hypotheses, which can then be used for the benefit of humanity; to achieve this goal, science is guided by several values, including objectivity, honesty and unselfishness**
- **Plagiarism, the misappropriation of other's intellectual contribution, is a serious form and probably one of the most frequently reported type of research misconduct**



EXAMPLE 7. Plagiarism

On 11 January 2012, a news portal published an article which claimed that material that around 180 of the 215 pages of Pál Schmitt's (a fencer and olympic gold medalist, elected president of Hungary since 2010), 1992 doctoral thesis: „Analysis of the modern Olympic Games' programme”, had been copied from a 1987 manuscript by Bulgarian sports researcher Nikolay Georgiev.

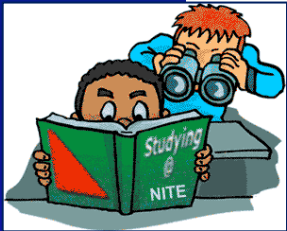
Concerns about a conflict of interest were raised when it was reported that multiple members of Schmitt's thesis-evaluating committee had also been members of national olympic organizations headed by Schmitt at the time his title was awarded. Schmitt denied the allegations, saying that no plagiarism took place, as he had listed Georgiev's work among the sources cited.

After a formal investigation, accepting the advise of a fact finding committee, Semmelweis University withdraw Schmitt's doctorate title. On 2nd April 2012, the Hungarian Parliament received Schmitt's resignation from the office of President.

STUDENT PLAGIARISM

1

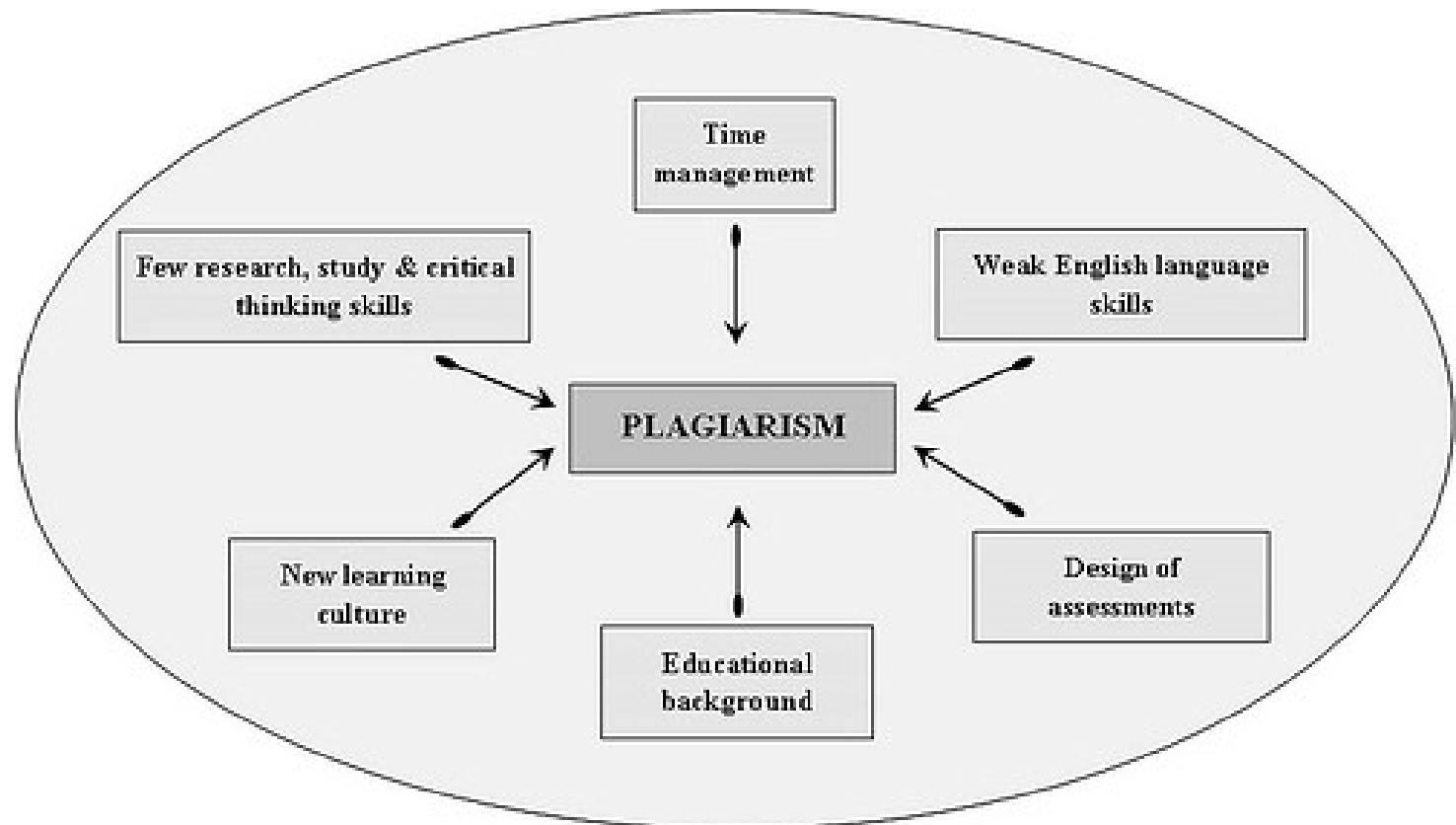
- Submitting someone's work as their own
- Taking passages from their own previous work without adding citations
- Re-writing someone's work without properly citing sources
- Using quotations, but not citing the source
- Interweaving various sources together in the work without citing
- Citing some, but not all passages that should be cited
- Melding together cited and uncited sections of the piece
- Providing proper citations, but fails to change the structure and wording of the borrowed ideas enough
- Inaccurately citing the source
- Relying too heavily on other people's work, i. e. fails to bring original thought into the text



Source: <http://healthinformatics.uic.edu/infographics/the-reality-and-solution-of-college-plagiarism/>

STUDENT PLAGIARISM

2



The core reasons (one or in combination) that could culminate in students plagiarising

Owen, H. (2007). ESL students: Fostering skills to avoid plagiarism. In A. Jendli, S. Troudi & C. Coombe (Eds.), *The power of language: Perspectives from Arabia* (pp. 215-231). Dubai: TESOL Arabia.

STUDENT PLAGIARISM

3

- Plagiarism is a serious academic offence
- It can result in: a failing grade on an assignment, failing a course, you could be suspended or expelled from the University
- If plagiarism is discovered after a student has graduated, the degree could be rescinded (taken back)
- Any misunderstanding related to assumed plagiarism can be prevented by correctly citing all sources



CITE YOUR SOURCES

- ***Because:***
 - It is courteous, fair, ethical and honest
 - It gives credit where it is due
 - It allows readers can find material you used: gives credibility to your work
 - It shows that you did background research and allows others to use/follow your sources
- ***When***
 - you directly quote another's actual spoken or written words
 - you paraphrase another's spoken or written words
you use another's ideas, opinions, words, thoughts, data, code, recordings, etc.
 - you refer to statistics, graphs, drawings, images, photographs, etc.
 - you use information from the Internet

FOOD FOR THOUGHTS

1

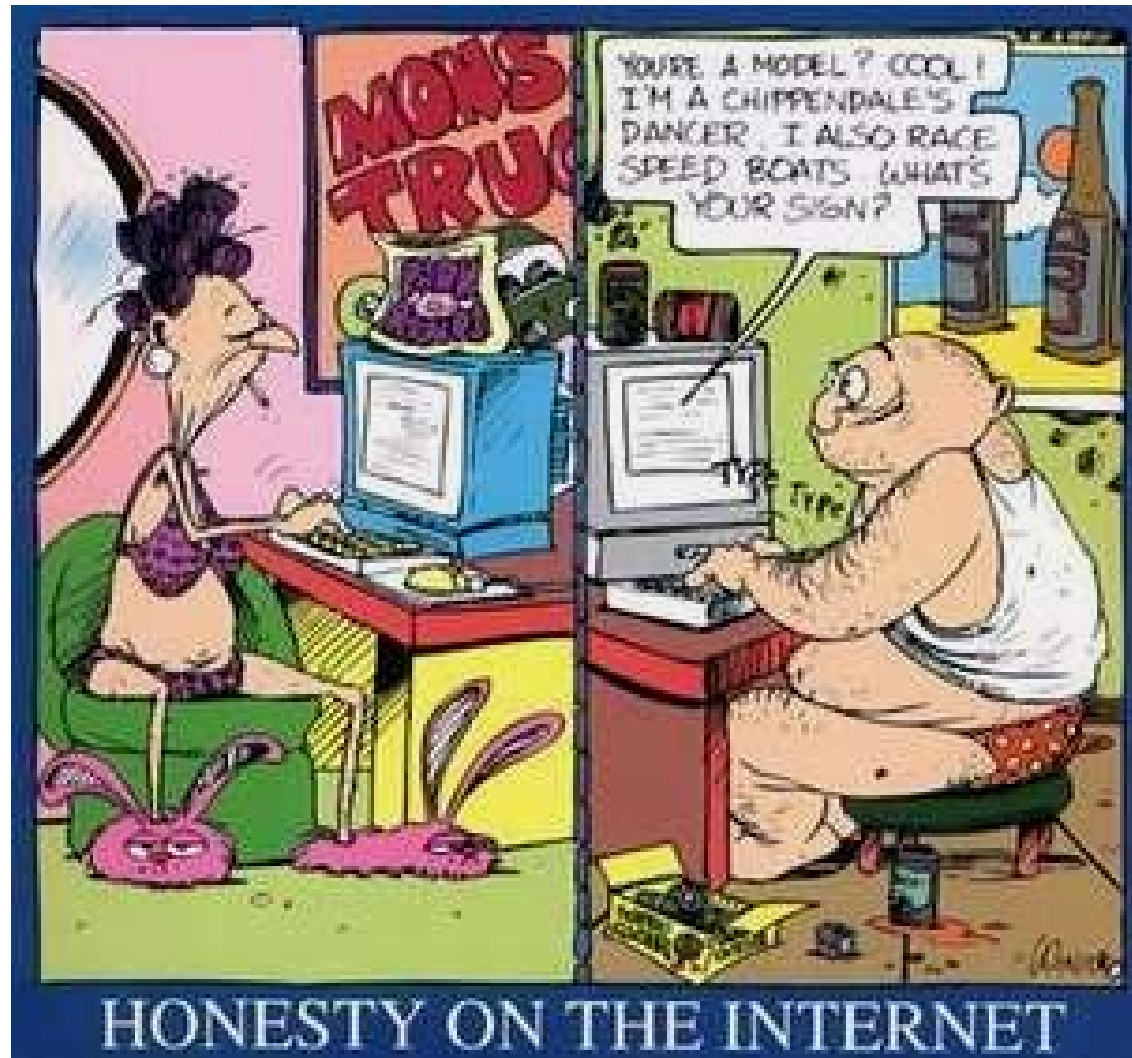
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**"I need you to do a presentation on the topic of 'plagiarism'.
If you don't have time to prepare anything, just steal
something off the Internet."**

FOOD FOR THOUGHTS

2



FOOD FOR THOUGHTS

3



They say you're good with forgeries?