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94-883 Applied Ethical Analysis

Code of Ethics Critique

February 6, 2023

## Code of Ethics Critique

Software plays a major role in virtually every aspect of our daily activities, from commuting, carpooling, food ordering, gaming, social media, to even music recommendations, it drives and enriches our lives. The impact of technology and software on people's lives is direct and has the power to either improve or negatively impact it. Given the integral role that software and technology play in society, it is important that the organizations and engineers responsible for creating this software be held to ethical standards that govern their actions and decisions. The ACM[1] and IEEE-CS[2] joint task force on software engineering ethics established the Software Engineering Code of Ethics and Professional Practices, which comprises eight principles that indicate the moral and professional obligations of software engineers. This paper will evaluate the strengths and weaknesses of the code of ethics in relation to Raiborn & Payne's code level categories and provide recommendations for improvement.

According to Raiborn and Payne, an effective code of ethics should have clear, comprehensive, and enforceable qualitative characteristics (Raiborn & Payne, 1990). A high-level review of the code of ethics shows that it possesses some key features of an effective code. The code is written in a concise and understandable manner, providing a comprehensive overview of the principles and expectations for software engineers (DeGorge, 1986). While some areas of the code could benefit from greater clarity, such as the guideline about avoiding unfair treatment based on irrelevant prejudices, it does outline expected behavior for software engineers. However, it does not specify what constitutes a violation of the code or the consequences for such violations, which may impact its enforceability – but this may be due to the independence of the organizations that issued the code.

[1] ACM: Association for Computing Machinery
[2] IEEE-CS: Institute of Electrical and Electronics Engineers Computer Society

## Strengths

The code of ethics provides concise principles and guidelines for software engineers to follow in their professional practice. The full version of the code of ethics not only outlines high-level ethical ideals, but also provides guidelines for the actions of software engineers. In terms of integrity, the code emphasizes the importance of being honest and transparent in all actions as a software engineer. It places a strong emphasis on ethical behavior, with the goal of maintaining the integrity and reputation of the profession. It encourages software engineers to protect confidential information, which is important for maintaining the trust of clients and employers. Principles such as accuracy in stating the characteristics of software, keeping private information confidential, responsibility for detecting and reporting errors, and avoiding false claims, all support the value of integrity. Justice is emphasized through the principles of fairness to colleagues, impartiality in the treatment of others, and not engaging in practices that may harm the public interest. Competence is highlighted through the principles of continuous learning and improvement, promoting public knowledge of software engineering, and ensuring that clients and employers are aware of the software engineer's commitment to ethical behavior. The ethical code also encourages software engineers to engage in lifelong learning, with the goal of continually improving their knowledge and skills. The value of utility is emphasized through the principles of assisting colleagues in their professional development, with the goal of supporting each other in their professional development, and creating safe, reliable, and useful software, which is in the best interest of the public.

## Weaknesses

The three primary shortcomings of the code of ethics are practicality, enforceability, and compliance. The code of ethics lacks clarity on what constitutes a violation and the consequences for breaking the principles and guidelines. Since it is issued by independent organizations, ACM and IEEE-CS, enforcement is the responsibility of individual companies and software engineers. However, the principles can easily be seen as empty, legalistic, or idealistic and not representative of the current software landscape. The code of ethics provides a reasonable framework, but it is not a one-size-fits-all solution for ethical decision-making in software engineering. Real-world software engineering is more complex than the guidelines suggest, and software engineers must use ethical judgement to make decisions that align with the spirit of the code of ethics.

Unfortunately, not all technology companies value ethics, leaving several software engineers in ethical dilemmas where they must choose between building features that harm users or potentially losing their jobs – including cases of whistleblowing. Being a responsible software engineer involves more than clean document and codes and meeting deadlines. It requires a deep consideration of the ethical implications of the world they are creating.

## Levels of Ethical Standards

The code ensures compliance with the law at a general level, promoting the importance of following all laws related to software engineering and avoiding any violations that may harm public interest. Some of the code reflects normal professional behavior that can be realistically achieved by software engineers, such as obeying all laws governing their work and taking responsibility for detecting errors in software. But it does not exactly consider the complexities of the industry and the specific challenges software engineers face, such as the trade-off of profit versus doing the right thing. In terms of practicality, while the code sets admirable goals for software engineers, such as advancing the integrity and reputation of the profession and promoting fairness and support among colleagues, it does not provide enough guidance on how to achieve these goals. Similarly, although the code provides an ethical ideal that sets a high standard for software engineers, promoting professionalism, confidentiality, and responsibility, it does not provide enough guidance on how to apply these ideals in real-life situations.

## Recommendations

As technology and software increasingly involve the collection and handling of personal data, it is important to clearly include guidelines in the code of ethics that emphasize the importance of protecting user's privacy and data security. Also, the code of ethics should provide guidance for software engineers to adopt ethical decisions in complex and challenging situations. Additionally, since personal values are often separated from work lives, it can be argued that this separation is what accelerates environmental and social harms. Hence, the code of ethics should encourage software engineers to adopt ethical behaviors in their personal and professional lives. Furthermore, the code of ethics should include a framework for enforcing ethical standards, including clear procedures for reporting, and investigating violations, and appropriate penalties for non-compliance. For software engineers within companies to truly be held accountable to the code of

ethics, the companies need to introduce the code to employees, train them and have them commit to the code of ethics. Through this, the software engineers can be educated about what constitutes ethical behavior, what constitutes a violation and the consequences of violations. Then set up a group of individuals with high unquestionable ethical standards to evaluate violations of the ethical standard. Practically, organizations should initiate and support the discussions of ethical dilemmas that exist in technology and software as well as future dilemmas that could consequentially exist. Software engineers should be encouraged to ask the tough questions about ethics even if exact answers are not obtained, these discussions will likely yield behavior consistent with ethical standards (CraftHub Events, 2019).

## Apology Evaluation

### The Great Uber Deception: The Greyball Scandal

In 2014, as Uber aimed to expand its operations to new markets across the United States and worldwide, some cities imposed regulations that prevented the company from launching in their areas. This was due to local opposition to the company establishing operations in their cities and competing with incumbent taxi companies. In various cities across the world, Uber drivers faced targeting and assaults as ride-hailing services began to be encroach on traditional taxi markets. As a result, Uber developed "Greyball", an internal software designed to safeguard its drivers in select countries. Initially, it served as a means of obscuring the locations of UberX drivers to prevent rivals from locating them. But as Uber expanded into new markets, its engineers realized that the Greyball tool could be used to bypass law enforcement and regulatory officials attempting to enforce taxi regulations. The software functioned by showing a fake version of the Uber app to identified likely government officials that did not allow any rides to be hailed, making it difficult for regulators to gather evidence against the company. The New York Times reported that Uber took extensive measures to identify and evade city officials using Greyball. Company managers would manually locate government offices and block customers who requested rides from those areas. Customers who registered with a credit card associated with a law enforcement credit union received additional scrutiny (Isaac, 2017).

The ethical breach involving Uber's use of Greyball software violated ethical principles of honesty, transparency, responsibility, fairness, and professionalism. Uber's behavior was clearly unethical and raised significant ethical concerns in the software engineering industry. Using the

Greyball software involved deliberately misleading and deceiving individuals, including government officials and was thus a breach of the principle of honesty. The importance of this issue lies in the fact that technology companies, including software engineers, have a responsibility to act in an ethical and transparent manner. Since the use of Greyball involved hiding information from regulators, it violated the principle of transparency in business and software engineering practices. Uber also undermined the responsibility they had to act ethically and responsibly. Additionally, Uber's use of Greyball undermined trust in the tech industry and raised concerns about the potential misuse of technology. It emphasized the need for clear and practical ethical guidelines in the software engineering field and the importance of considering the potential social and individual impact of technology. In this case, Uber's ethical breach affected several stakeholders that were directly or indirectly impacted. Local government officials were primarily targeted by the Greyball software, which likely made it difficult for them to enforce local regulations and gather evidence against the company. They were directly impacted by the ethical breach and would have had a stake in ensuring that similar breaches do not occur in the future. Shareholders invested in Uber may have been affected by the harm to the company's reputation and the consequences of the ethical breach, such as decreased public trust. Since shareholders have a stake in the financial performance and reputation of a company, the harm to Uber's reputation and financial performance would have impacted the value and returns of their investment. The tech industry may have been affected by the ethical breach, as it would have raised questions about the ethical standards and practices of technology companies and undermined trust in the industry. Additionally, the few normal customers who would have hailed rides from government offices might have been blacklisted and falsely subjected to additional scrutiny, violating their privacy.

For this apology critique, I will focus on one city, Portland, where Uber is alleged to have utilized its Greyball software. In April 2017, Uber admitted in a letter to Portland officials that it utilized its Greyball software to conceal its UberX drivers during a two-week period in December 2014, when the company was not authorized to run the UberX service in the city. Uber alleged that it discontinued the use of Greyball on regulatory authorities in April 2015 once it received approval for operations (Bhuiyan & Romm, 2017). Uber's letter to Portland officials was not exactly an apology, but rather a formal response to inquiries raised by the city officials in March 2017. It included information about Greyball technology and the use of the technology in Portland. In a

mostly defensive and dismissive-toned response, Uber stated that the company applied Greyball tags to hide the standard UberX Portland vehicle view on 17 rider accounts. They argued that they aimed to meet the high demand for their services in the city and were worried that their driver-partners would face financially penalties for participating in the fledgling service at that time. Uber claimed that "this situation lasted for a very short period of time". Uber's response in this letter exhibited a sense of moral relativism by implying that the short duration of the ethical breach made it less severe (Gowans, 2021). However, committing a crime for a two-week period does not absolve Uber from accepting responsibility for its actions.

In April 2018, a year after its initial letter to the city officials of Portland, Uber formally apologized to the Portland City Council through a public letter. The company acknowledged having made "missteps" in its operation launch in the city in 2014. The then-recently hired regional manager, Alejandro Chouza, took the initiative to personally apologize on behalf of Uber to Portland city officials. During the meeting, Commissioner Fish proposed a public apology from Uber to the entire city council to restore strained relationships, to which Uber representatives concurred and deemed it a wise move. Overall, Chouza's apology was a step in the right direction towards repairing the damage caused by Uber's use of Greyball software in Portland. The apology mentions that the company will conduct its business in Portland with integrity, humility, and a passion for improving community, which shows a willingness to make amends. The apology further mentions partnerships established with public agencies and community organizations to improve urban mobility, which can be seen as "good works" to make amends for the damage done and show commitment towards restoring the company's *good* name. However, the apology is written in a general manner and does not explicitly admit to the use of Greyball software or seek forgiveness, which could have made the apology stronger. Additionally, the apology does not mention any form of punishment or retribution for their past unethical actions, which is a key principle in repairing damage.

Considering the elements of an ethical apology, the apology was made a year after the investigation into the Greyball software scandal, which could indicate that Uber acknowledged the issue and tried to address it. However, this appears to be because of a change in management. The apology was delivered in a public letter addressed to the Honorable Mayor and City Commissioners of Portland and accessible on Uber's website, demonstrating that the company took the time to use the appropriate context and setting. Also, although in broad terms, the apology acknowledged the

mistakes made by Uber and expressed regret for failing to live up to the "Portland way of collaboration and transparency." This shows that the company was aware of violation of ethical standards and sought to make amends. Additionally, the apology contains a commitment to work with the city to improve access to transportation options and to conduct business with "integrity, humility, and a passion for improving the community." This indicates that Uber considered preventing similar incidents from happening in the future. However, in terms of weaknesses, the apology general in nature and does not specifically mention the use of the Greyball software or its impact. This could be perceived as a lack of accountability and a failure to acknowledge the wrongdoing. It also makes their planned actions seem idealistic but impractical. Furthermore, the apology is signed by the General Manager for the Pacific Northwest and does not mention any individual or group accepting responsibility for the actions. This could be seen as an attempt to deflect responsibility and a lack of accountability. Overall, the apology from Uber has some strengths in terms of expressing a commitment to make amends, but it could have been stronger in terms of specifically naming the wrongdoing, apologizing, accepting responsibility, and outlining practical planned actions.

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