Ethical essay about the misconduct in research
In this essay I will define the definition misconduct and define historical situations of misconduct. I will make awareness of today’s scientific misconduct situations and discuss the reality we are surrounded by. I will enhance different ethical aspects of misconduct, in addition to cases all researches can be enveloped into, and consequently be affected by it in future research projects.

Researches has altered that all published articles in journals are thought to be correct with no prevalence or acknowledgement of a misconduct allegation. The definition misconduct was well-publicized in the 1980s, where researches increased the concerns in public about the definition, and revealed the prevalence of being in a misconduct situation. [1] The public concerns were not just in the scientific levels, it also concerns the possibilities of occurring misconduct in the government, universities and other research institutions levels. This has as a result increased the awareness of misconduct, and it has been design procedures as policies (Office of Research Integrity) to be able to follow, this to be able to prevent a misconduct and being able to identify, investigate articles and then report them. [5] The Office of Research Integrity (ORI) is general guidelines performed for minimizing the risk of misconduct and guidelines point to be able to define a misconduct and to be able to report them. However, this will be further altered in the essay were it will be more-overly discussed and defined in order to the general guidelines in considerations of the misconduct position.

In the year 1982 the book Betrayers of the Truth: Fraud and Deceit in the Halls of Science written by the journalist William Broad and Nicholas Wade, highlighted one of the most controversial topics that had an important role on constructing an attention in the public, that there is research misconduct [1]. In the book it gave several evidences of misconduct allegations that was performed from very known scientific individuals. One known allegations was performed in an experiment, where they fitted their results to their according’s and modified their results. Such as, Louis Pasteur reported in his announcing of his research that he had found an anthrax vaccine in advance, although he was not completed with his experiment and had no experimental claims that proved a completed project. The theories were not in role with the reality, which was shown in multiple situation in the earlier 1900s were fabricated evidence was made up and did not match with the reality, however no consequence or policies could be found in that time range.

Among all the historical situations of misconduct, there were several known stories in the earlier 1900s that made people more aware of misbehaviours, which altered among the researches to be more observed about presented scientific news, that were in practice brilliant. However, in reality they could not be true. The famous example, called the “Piltdown Man”, in the year 1908; claimed that they had found bones from an individual that was thousands of years old. [1] The curator claimed that the person that this bones came off, had the characteristic from half human and half monkey. Even though that this discovery was not true and that there was no evidence, the people working along with this curator did not criticize the finding. The reason why the colleagues did not criticize, is depending to various reasons, but one of the most
reasonable reasons, is due to their careers and reputations would be affected. In fact, this can currently be altered among the cases that are targeted as a misconduct case.

In this paragraph, we will make aware of what misconduct are found in research and what they mean. The research misconduct is divided into four definitions: Falsification, Fabrication, Plagiarism and “Para-Fraud”. The first three definitions are reformed to be the “key point for inappropriate” misconduct behaviours and summarized as FFP, which is the most common misconduct in research and found daily. The definition “Para-Fraud” is not that commonly found, due to that the term is in certain circumstances not considered as a misconduct. It is not necessary misconduct in the situation were a researcher removes an outliner in statistical results that is affecting the results of the experiment. Since the term “Para-Fraud” is not always considered as a misconduct, it is often discussed if it should be considered as a misconduct or just reflected as” bad science”. The para-fraud is often altered in scientific situations were a researcher facilitate data and change the results for its beneficial madders. I will not discuss this further, but I wanted to define the meaning of the term.

**Falsification**

Falsification is defined by ORI as “Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record”. Consequently, falsification misconduct is the most common case of research misconduct. The misconduct as ORI defines, means that the scientist modifies or changes in the actual research results. Among the examples of this situation, it is altered in the book” Responsible conduct of research” that a study presented that of 133 cases of misconduct definitions, there are 40 % (53 cases) among all cases that were defined as falsification cases. The outcome from the study conclude with that the preponderance of misconduct among the cases, falsification along with fabrication is defined to be of the total case amount, in percent, approximately 99 %. However, as mention previously, falsification is more observed in conduct cases than fabrication.

Another very known misconduct research case, publicized by a scientist from Copenhagen, by the name Milena Penkowa, was altered with the allegations of that she had falsified data in her research. In 2010, Penkowa, became well known in earlier 2000s for her work with multiple sclerosis animal models. [3] Penkowa was suspended from the University of Copenhagen, where she worked at that time, she was accused from the Danish neuroscience community and further all her experiments she had been involved in was altered to be detected. ORI was included in the investigation and they resulted that she had falsified data in 15 papers. And as mentioned in multiple articles her experiments were altered as “potentially international misconduct”. She had been fudging the amount of animals that were used in her research and which protein levels she used in the tissues she was determining. This was historical, which resulted into that all the co-workers, such as PhD student, colleagues at the university were accused in her experiments and affected negatively. In addition, the reputation of her co-workers was affected in their future projects. However, in 2011 she was officially
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resigned from the university that conformed her guilty resulting in losing her PhD and medical degree after being charged in misconduct. This can be seen in multiple cases today and a lot of scientist lost their degree due to misconduct.

**Fabrication**

Fabrication is defined by ORI as “Fabrication is making up data or results and recording or reporting them”. Consequently, fabrication misconduct is the next most common case in research misconduct. The definition is reformed as ORI define, that the fabrication alters when a scientist changes tin his data and modifies it for his benefits, and in other cases the researcher alters new results that is not in compare with authenticity of the research. Among the cases of this situation, it is altered in the book” Responsible conduct of research” that a study presented in 2004 and adapted by Rhoades, altered that of 133 cases of misconduct categories, there are 22 % (29 cases) among all cases that were defined as fabrication cases. As mentioned previously, the outcome of the study concludes with that, the preponderance of misconduct among the cases, falsification along with fabrication is defined to be of the total case amount, in percent, approximately 99 %. However, as mention previously, falsification is more observed in conduct cases.

In the year 2006, a stem cell researcher from Korean, by the name Hwang Woo-Suk [4], was found to be fabricating numerous experiments in the stem cell field. Although, Hwang was previously known as expert pioneering in the stem cell research. The researcher was infamous with his two Science journal articles that altered, that he had succeeded an experiment by creating a human embryonic stem cell trough cloning. Which resulted into the fraud of that he was faking his stem cell research, and he was conducted to scientific misconduct. As a consequence, to his actions, he was sentenced by two-years in prison and were prohibited by the government of South Korea to enter any stem cell research, and fired by Seol National University from his position at the university that he had before the conduct. Yet, even though he were barred from engaging any scientific madders in stem cell research, Hwang is continuing today his research in his lab of creating “embryonic stem cell lines from cloned pig embryos” and publishing numerous articles in PubMed. His carrier was not ended due to his misconduct. However, the situations can differ globally and I would say he was fortunate to continue with his research and publish actively manuscripts in one of the world larges medical libraries at web.

**Plagiarism**

Plagiarism is defined by ORI as “Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit”. Yet, Plagiarism misconduct is not common in research and often noticeable by university and high school students. However, this does not mean that it cannot be defined by researches. As the definition altered by ORI, the misconduct is defined in research, and among students, that the individual copies another person’s ideas, experiments and processes ending in publishing them as his/her own ideas, and do not appropriate credit for the original owner for the contest. Among the examples of this
situation, it is altered in the book” Responsible conduct of research” that a study presented in 2004 and adapted by Rhoades, altered that of 133 cases of misconduct categories, there are only 6 % (8 cases) among all cases that were defined as plagiarism case. Which is of the total altered as only 1 %. Another case of plagiarism misconduct in science, is as example, a professor writes a proposal for a grant research, and due to the short time span he had, he copied a few sentences from a journal paper that was written from another author. He did not refer to the author, as mentioned in the book, “Responsible conduct of research” [1]; that depending on the facts of the situation, the authorship matter might fit into plagiarism definition of misconduct. In student situation of misconduct, is more commonly the same, where the student conducts a project, experiment, exam, presentation etc. The situation can be defined in different situations, and can be altered in situations in addition to falsification and fabrication conducts.

**Conclusion – in reflection for future concerns**

Consequently, even though there are consequence for misconduct situations, it does not mean that they are consisting in all researches. Even if, all scientific experiments are accurate, yet today it is common to come across misconduct in all its forms and definitions. With this said, how misconduct allegations can be prevented, is by altering increased awareness in research, it can be by targeting the individual that had facilitated, fabricate or plagiarised his/her experiments. This is commonly known by different sites were each new case of a misconduct worldwide is published for the public to make people more aware about what this people have done to be denied in research world. This can be altered at ORI page, at Research misconduct web bases, COPE etc.

Additionally, an education may be important to provide among all researches to enhance the research practice among every scientist with high ethical morals and challenge and tempt the ethical issues to be more relating to the wide variety. This will result, in additional integrity that will be consist beyond all experiments. I would hope that there would be different policies to be followed, and that the degree of a researcher would only alter the researcher by himself that committed the crime of a misconduct and not the entire group of the research.

As a conclusion, knowledge and ethics are demanded equally in the field of science, a scientist with no knowledge is not a scientist, as well as, a scientist with no ethics is not a scientist.

**Reference**

[1] The book that are used are” Responsible conduct of research”, Chapter 8, written by Adil E Shamoo and David B Resnik

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