

Proposing Solutions to Prevent Standard Deviations in the Scientific Community on the Basis of Combined Buddhist Philosophy and Scientific Standards

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Abstract: *The behavior of standard deviation in the scientific community has been studied and discussed a lot in recent years, there are also a number of solutions that have been developed to contribute to the prevention and limitation of standard deviations in science. However, there are not many studies relating to the influence of religion with non-standard behaviors and the application of religion's philosophy to limit standard deviations in science. In this article, the author boldly applies some ethical values in Buddhist philosophy combined with scientific standards to propose some solutions to limit the behavior of deviation in the scientific community.*

Keywords: standard deviation, scientific standard, ethical value, Buddhist philosophy

1. Introduction

In recent years, science and technology have been one of the fields being invested greatly by the State. Every year, this field is invested about 2% of the total state budget spending (equivalent to 0.5% of GDP), of which a large part is devoted to scientific research. In addition, the management mechanisms of science and technology tasks is constantly being innovated in a positive direction, consistent with the reality (Ministry of Science and Technology, 2013). In spite of the positive aspects and contributions of the scientific community, in practice, there are also many problems of standard deviation, in violation of standards in the scientific area such as ethical deviation, social deviation, cognitive standard deviation, technical standard deviation, etc.

In fact, misbehavior in the scientific community comes from many different causes, subjective factors derived from scientists or external objective factors. In the face of that issues, it is necessary to find out which solutions to prevent and reduce misbehavior in the scientific community. For that purposes, the author proposes a few of solutions that contribute to reducing the problem of deviation in the scientific community based on scientific standards and ethical values in Buddhist philosophy.

1.1 The basis of proposing solutions to prevent false behavior in the scientific community

a) Common standards of the scientific community

It can be seen that, in order to prevent misbehavior in the scientific community, it is necessary to understand what common standards of the scientific community are. This is considered as one of the bases to help propose preventive solutions to this problem.

According to Merton (1942), an American sociologist has generalized the standard structure of science through four basic principles based on the ethical foundation of science, which are the ethic values shared by all scientists:

- Universalism;
- Communalism;
- Disinterestedness;
- Organized Skepticism.

Universalism is the first element in the structure of scientific standards that emphasizes objectivity. Accepting or rejecting requests to put into scientific list does not depend on the personal or social attributes of the author's race, nationality, religion, caste and personal qualities.

Communalism, originated word used by Merton means communism that the intrinsic discovery of science is a product of social cooperation and entrusted to the community and highly socialized. Therefore, scientific results must be widely communicated.

Disinterestedness is not to be equated with altruism, egoism. Controlling scientists to act objectively is reward and punishment.

Organized Skepticism requires a scientist to have sufficient professional basis to conclude, to know organized skepticism about scientific matters.

b) The behavior of standard deviation in scientific activities.

Scientists may deviate from the standard by accident or intentionally, also due to the level of research facilities and methods. There are four types of standard deviation according to Vu Cao Dam (2008):

- The standard deviation due to perception has two meanings, including: (1) standard deviation arising from lack of knowledge, lack of information; (2) standard deviation derives from perceptions or actions that are different from contemporary conceptions of science, for example, Copernicus's cosmological model was different from Ptolemy's cosmological model, which was recognized by the scientific community before the fifteenth century.

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- Technical deviation is the type of standard deviation due to the approaching method, the level of technical analysis, equipment and facilities. There are also two types of this standard deviation: (1) The researcher randomly violated the method; (2) The researcher has restrictions on means and methods ...
- Social deviation is a type of standard deviation due to: (1) Historical limitation in social conditions in which the researcher operates. Historical limitations lead to institutions that make scientific conclusions garbled according to social prejudices. For example, studies on the agricultural economic system organization in the command economy period cannot go beyond the concept of agricultural production in that historical period, for example, not "allowed" exchange products on the market; (2) Social deviation can also be brought about by pressures of social powers. For example, the Church's cosmology does not allow the propagation of Copernic's heliocentric view.
- Ethical deviation is a kind of intentional standard deviation, with attempts to dispute advantages unwarrantedly over peers.
- Each incorrect conclusion about science can appear due to only one type of standard deviation, but some erroneous conclusions appear because of some standard deviation, for example, both technical deviation and cognitive deviation, and also both ethical deviation and social deviation. The forms of standard deviation will be one of the bases to help build solutions to prevent misbehavior in scientific community now.

c) Some ethical values in Buddhist philosophy

In addition to the standard of the scientific community and the misbehavior in the scientific community, there is a need to pay attention to the ethical values in Buddhist philosophy as a basis for proposing solutions to prevent misbehaviors in the scientific community. Firstly, some ethical values in Buddhist philosophy are also similar to those of social standards in general and scientific standards in particular. Secondly, the influence of beliefs and religions to Vietnamese people, especially Buddhism, is undeniable. People who misbehave often look for activities such as temple ceremonies, fortunetellings, prayers and offerings to find psychological balance. Therefore, this is also a basis for proposing a solution.

1.2 The Noble Eightfold Path

The Eightfold Path is the path to get rid of suffering in this life, although it is called the path, it is not a sequential practice but eight different aspects of life. The eight aspects of the Eightfold Path consist of: Right Understanding, Right Intention, Right Speech, Right Action, Right Livelihood, Right Effort, Right Mindfulness, Right Concentration.

- Right Understanding: The right understanding, perception. That understanding is that all things that exist in this world are conditioned by causation, do not last forever and always cease. However, under the perspective of Buddhist Philosophy to realize the correctness not only stop at thought but need to: listen to teachings, read scriptures on doctrines; experience; practice by keeping mindfulness everywhere, every action (Thich Nhat Hanh, 2014).
- Right Intention: is true thinking, thinking is not contrary to right, beneficial for yourself and for others. Right thought arises on the basis of right understanding and in return affects right understanding. Right understanding also manifests in the perception of the selflessness of all things. That all phenomena, things are conditioned by conditions, in this universe there is no phenomenal thing "has a separate and independent being from all other phenomena. Phenomena are caused by conditions and arise "(Thich Nhat Hanh, 2014: 124). Not true thinking is the thought of benefits, talents, fame looking for hundreds of thousands of schemes to harm people.
- Right understanding and right thought are related to the cognitive side of the person. It helps people to see things, phenomena properly, will understand that suffering is not in things but in the view, in human perception of things, about the world. And when people realize how they will act in this way will lead to suffering or happiness is decided by man.
- Right Speech: True speech is not false, has legitimate benefits, righteous, upright and reasonable. Words do not harm the lives and honor of others. Therefore, it is not to lie, not to speak harsh words, to say two words, not to say wrongly about things (add or remove, embellish, use painful words, divide others, ...). On the contrary, it is necessary to cultivate by saying truthful words, daring to say unjust things that are not true
- Right action: Means action with intent. Act according to the right, respect everyone's right to coexistence. The righteous act is the act of conscience, morality in one's position, knowing how to preserve the moral character. legitimate sacrifices to benefit living beings (Lotus Library, 2011). Thus, the resulting right karma is not killing, stealing, or adultery.
- Right Livelihood: Is a true, pure life, has a righteous means of livelihood, righteousness, not exploiting, harming the common interests of others. Living with true talents and abilities, not deceiving people, living in high quality, righteous dharma is not superstitious. According to the Buddha's words to not do things that cause negative karma for humans and animals, not by illegal, cruel, and devious profession that causes damage to animals.
- Right Effort: Diligence, enthusiasm to do righteous deeds that benefit us and others, eliminate evil, practice good for oneself and for others.
- Right Mindfulness: Being contemplation, perception (knowing, observing) body, mind and righteous things every moment to think and act in accordance with the right to neutralize wrong thoughts. The practice of mindfulness helps the practitioner to always be alert, clearly aware of what is happening inside and outside themselves, helping the practitioner to realize the nature of things as they exist (Nguyễn Thị Minh Hang, Dang Hoang Ngan, 2019).
- Right Concentration: means concentrating right thoughts, righteous concentration, not letting the mind be disturbed, practicing meditation genuinely to develop insight and liberation. The goal is to help people separate from the evil deeds, accomplishing the four types of meditation: first meditation, second meditation, tam meditation and four meditation.

In short, the Eightfold Path are the eight branches necessary and sufficient for the practitioner to borrow from there as the path leading to the liberation of suffering. The Eightfold Path is the boat through in which the practitioner goes beyond this shore - the shore of suffering to the other - the shore of enlightenment and liberation.

1.3 Law of Cause and Effect - Karma

According to the Buddhist Philosophy point of view, karma is good or bad thoughts, words and actions accumulated for a long time and become a habit that creates the power to dominate all activities in human life since born to die. Karma does not disappear when people die, but it follows us through the next life. That means "you reap what you sow". If we do the right thing, the results we get back will be good things. Conversely, if you sow bad thing, you will reap bad results. However, the Buddhist Philosophy also maintains that, not all actions create karma, but it must be intended actions (Plamintr, 2008 cited by Nguyen Thi Minh Hang, Dang Hoang Ngan, 2019). Thus, karma is the intentional thoughts, words, and actions. Karma includes body, mind and speech.

The concept of cause and effect, karma has been talked about long before Buddhism was born long ago in the Vedic texts. Gautama Buddha was the one who re-emphasized and reaffirmed its existence, taking it as a law of the natural world. It is the balance of power that creates justice for the universe that no god or Buddha can intervene and change. Therefore, humans are the masters of their destiny. It is the views of the Buddhist Philosophy on causality, karma that have shown the humanistic and scientific spirit of Buddhism when considering people as masters in their lives, creating their lives according to their own will. Buddhist philosophy has pointed out the causes and suffering for people and at the same time shows the way to get rid of those suffering.

2. Solutions to prevent standard deviation in the scientific community

2.1 Solutions to raise awareness for scientists

Any program of preventive intervention is rooted in awareness to ensure that those in need can correctly and clearly see the problem. In addition, the author's research results show that the awareness of some scientists is still limited, unknown about some of the manifestations of plagiarism or the specific ways of those manifestations. Therefore, the solution to raise awareness of scientific standards for scientific people is a necessary and important solution. Raising awareness of scientific methodology means mastery of method skills, including in the natural sciences, technical sciences and social sciences. Only unified awareness of scientific methodology can unify the language to evaluate the correctness of data collection and processing results. Education about honesty and integrity in academy and scientific research

Social cognitive theory calls for an explanation of how people approach certain behaviors. One of the reasons for deviation is the lack of skills and knowledge. Especially the group of monks and nuns when participating in studying at

school and having learning and scientific research activities. Unlike the group of lecturers and researchers, this group have not much experience in scientific research activities. Therefore, this is a group of objects that need to be focused on improving knowledge about scientific ethical standards as well as incorrect manifestations

For schools, institutes, and scientific research organizations, it is necessary to have regulations and create an environment that promotes scientific culture. There is a need to develop a mandatory requirement for ethics class attendance in the scientific community for those doing scientific research. This should be done while still being at school, put into the curriculum for students.

Perception of scientific standards: Scientific ethics is an important and fundamental issue in any fields in general and in scientific research in particular. The topics need being focused on include:

- The first principle is intellectual honesty. That is scientific knowledge based on truth, which must be observed or collected by objective methods.
- The second rule is to be careful. This principle emphasizes the carefulness of the scientists to avoid mistakes and errors in all scientific activities.
- The third principle is intellectual freedom. This is the principle that ensures scientists are given the conditions to pursue new ideas and criticize old ones. They also have the right to conduct research that they find interesting and benefit to society.
- The fourth principle is openness and publicness. This is the principle that emphasizes interdependence in scientific research. Scientists are responsible for sharing data, results and researching methods, theory, equipment ... with colleagues, giving them access to their data, if necessary.
- The fifth principle is to recognize the contributions of the predecessors and do not use other people's research as your own achievements. Scientific knowledge is cumulative and built on the contributions of many scientists in the past and present. Recognizing their credit is a convention of scientific ethics, and the form of acknowledgment can be expressed through references, thanks, or giving them the chance to be named as co-author.
- The sixth principle is public accountability. Scientists have an obligation to publish their achievements to the public ..

For groups of people who believe in Buddhism or are influenced by Buddhism, in teaching about philosophical values of Buddhism should be related to the standard values of the scientific community to encourage and raise awareness for them. In Buddhism, improper things can also arise from ignorance, from incorrect perception of society. The Buddhist philosophy mentions preserving or following the five commandments is one of the basic norms of the Buddhist Law, while also demonstrating the noble spirit of humanity. It is respecting all life, treating others like treating us, having a rational human attitude towards material possessions, protecting family, harmony, trust, integrity and upholding ethics, etc.

These traditional cultural values need to be inherited, promoted, strengthened and expanded in order to bring about positive values to the society and reinforce the right existence and vitality for Buddhism. Culture needs to be inherited and there is no better way to do that than through education. Education is not only to exchange knowledge, but to educate humans, nurture the soul, consolidate moral values and to form a system of norms which is suitable to modern society. This is also the responsibility of Buddhism towards culture. When people especially scientists are aware of the moral values of Buddhism, they tend not to violate the commandments of Buddhism as well as the regulations of the scientific community. Keep away from bad conflicts towards colleagues and try to do the right things according to the standards of being a scientist.

In addition to raising awareness of scientific standards, manifestations should be raised about the awareness of work ethics in scientific research, the responsibilities of scientists and the consequences for society, when violating scientific standards. More importantly, it is to uphold the honor and qualities of scientists, to build a scientific culture to prevent misbehavior.

2.2 Solutions to improve skills for scientists to avoid inappropriate manifestations.

Besides raising awareness for scientists, it also requires enhancing skills to be able to prevent. This is really necessary especially for social science research. It can be seen that in the past, printed books, magazines, ... were the main sources of reference and took a lot of time to collect and read. However, the Internet now provides a huge database and does not take much time to search. Those are advantages, but that also creates the opportunity to have misbehaviors such as copying, plagiarism because it is easy to access the amount of knowledge. Especially in the context that more and more information and knowledge is being provided through the Internet.

In fact, it is possible that the scientists who are aware that there are manifestations of transcription, plagiarism or other inappropriate scientific activities, but they themselves do not know how to avoid those things. Therefore, it is necessary to equip them with skills to prevent misbehaviors. This depends on different scientific majors, for social sciences mainly the story of copying, plagiarism, investigation, data, publication of research results, ... These skills needs to be communicated and scientists must master, especially lecturers and researchers need to understand the best way to practice their careers. More importantly, they will be the ones who teach and guide their students and colleagues to do better.

This is like the Buddhist philosophies that have shown people the path to practice according to the Eightfold Path to be able to go to Nirvana, freeing the suffering of reality. The scientific path is also a long and difficult way to find knowledge for social development, just like practice, it is not a sequential practice but eight aspects. different edges in life. The eight aspects of the Eightfold Path include: Right Understanding, Right Intention, Right Speech, Right Action, Right Livelihood, Right Effort, Right Mindfulness, Right

Concentration. It requires that the manifestation of the scientist also includes many different aspects of thinking, perception, thinking, diligence to reach knowledge on the scientific path. And these skills require scientists to learn, create an environment to practice and promote.

The knowledge and skills are not only learned in books but also in practice as learning environment and work. Organizing conversations and discussions for scientists to raise awareness and skills to encourage them to follow the appropriate standards of the scientific community in order to create effective scientific products that contribute to society for human knowledge..

It is necessary to update and train new researching techniques and methods, digital resource positioning, managing and citing skills for scientists to avoid technical deviations.

2.3 Solutions to detect, intervene and handle violations in the scientific community

It can be seen that our country currently has the necessary sanctions for intellectual theft, including three chapters related to intellectual property in the Civil Law (Copyright, Industrial Property and Technology Transfer.). In the field of science, there is a Law on Science and Technology, but the crimes of fraud in science and technology activities have basically not had effective sanctions to adjust. Therefore, this is a necessary solution to help prevent misbehaviors in the scientific community.

From the According to Buddhist point of view, the law of causality can invisibly govern the rules of life, but it is also very effective for those who believe in Buddhism, in the values and philosophies of the Buddhism. It is the law that has a controlling role on human behavior, making them always think about the consequences before taking their own actions and thoughts. Thus, it reduces misbehavior in society. However, for the common violations in the society and the scientific deviation, it is necessary to have specific solutions and the violators need to be responsible towards what they did. Because not all of scientists can believe and behave like the commandments of Buddhism. There are some specific measures such as:

On the assessment method, it is necessary to have an effective mechanism to critically analyze research results, minimize the limitations of the current evaluation system, especially in the social sciences that lack specificity about indicators. It still carries qualitative indicators, lacks coherent methodological indicators. It is necessary to have methods of evaluating objectively and stick with research results.

Legally, there should be laws specifying that all research results are allowed to be published in any appropriate form, such as through public or non-public publications. And public to the social community may have feedback upon discovery. For detecting violations, it is necessary to check, monitor and announce publicly when the investigation results are available.

At the same time, violators are strictly punished. For example, if a teacher violates, how will it be handled? If the violation is serious, the teaching can be stopped, and the qualification be revoked. In fact, there are many violated cases because they often see their colleagues and friends cheat but not be handled. There are levels of regulation according to each level of violation and different subjects: lecturers, students, researchers, ... There is also a need to develop integrity in science, which stipulates regulations on scientific quotes.

People can now control things by software. For example, Turnitin (www.turnitin.com) can be used to detect and manage fraud in universities/ organizations. It is necessary to invest in building and perfecting a system of tools to control plagiarism in scientific research projects, such as dissertations, journal articles, specialized books ... "Plagiarism" controlling Software has been applied by many universities, many publishers, many press agencies ... to check the degree of copying of scientific works before making a defense (for thesis, dissertation) or socialization (for books, magazine articles ...). However, it is necessary to invest, upgrade and widely apply not only in universities but also in many other research organizations and institutions.

Besides, security of information and ownership rights to research works of the authors should be given attention. It is necessary to control information on the internet to avoid purchasing documents as theses and research works easily.

2.4 Solutions to organize and provide information on science and technology

It can be seen that science and technology information sources are an important resource for scientific research and technological development, contributing to the country's socio-economic development. Scientific information sources are plentiful in many special forms in the current digital age. However, due to the limitations of human resources, scientists cannot fully grasp scientific and technological information. This is also one of the reasons leading to the fundamental deviation of scientific research activities such as repeating studies, works of predecessors, ...

Therefore, the solution is to organize activities and provide scientific and technological information in order to supplement, exploit and use science and technology resources effectively for society in general and community of scientists in particular. Sources of science and technology information consist of "non-technology information presented in the form of books, newspapers, scientific journals, conference proceedings, scientific conferences, explanations of tasks, reports on actual results and applying results of science and technology tasks, scientific dissertations, design documents, techniques, databases, websites, scientific and technological statistical documents, multimedia documents and documents on other media" (Government Decree 11 on science and technology information, 2014). Information on science and technology tasks; domestic scientific and technological publication and international publication by Vietnamese authors; index of scientific citations; science and technology organizations and human resources; information on patents and intellectual

property. It can be seen that the source of science and technology information is very rich for people doing science. Therefore, it is necessary to organize, statistic and manage science and technology tasks to have accurate information on implementation results, avoid repetition in the implementation allocation process. Research institutes and schools need to be provided with information resources on science and technology to apply, exploit data and share data to serve the learning, researching and teaching process.

When information about science and technology is widely and publicly communicated, it will help scientists to grasp and avoid the error of the repeatability or copying of previous products. Besides, it is also a source of scientific database for reference and application of new research methods to reduce possible bias due to inappropriate research method.

3. Conclusion

The behavior of standard deviation in the scientific community is a painful problem in science in our country. It is not easy to propose solutions to limit the standard deviation behaviors. Although there are many articles as well as research projects that have analyzed and proposed solutions to limit standard deviation behaviors in science, there are not many studies on the role of religion in limiting standard deviation behaviors. In this article, the author boldly gives the link between some ethical values in Buddhist philosophy with scientific standards, thereby contributing some solutions to limit the behavior of standard deviation in scientific community, contributing to the effort of building institutions to prevent standard deviations, and developing our country's scientific activities in a positive way and right trajectory.

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