Transgenic Animals and Buddhist Law of Action (Kamma)

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ABSTRACT

Transgenic animals produced through cloning and genetic engineering techniques have been used as research models of human diseases, human transplant surgery, pharmaceutical drugs, innovative food products and so on. According to Buddhism, killing or violating animals is unwholesome action and considered as breaking the first precept (*sila*) and intention (*cetanā*) is the most important factor in determining *kamma*. There is a correlation between animal violation of transgenic animals and the Buddhist law of action (*kamma*). Regarding twelvefold action, weighty *kamma* is the priority condition for the next birth followed by death-threshold *kamma*. Anyone who gets in the habit of harming or killing living beings will be born in the lower plane of existence such as animal world, hungry ghost world, demon world and hell or if reborn as human beings, his life will be short. If researching on transgenic animals is unavoidable, one has to accept the consequence of *kamma*. Understanding the law of *kamma* will help one to realize that both wholesome and unwholesome actions will lead one to continue in the cycle of birth and death (*saṃsārā*) with all its associated suffering (*dukkha*). The escape from *saṃsārā* can only be achieved by developing the Noble Eightfold Path.

Keywords: Animal violation, Transgenic animal, Law of action, *Kamma*, twelvefold action, Buddhism

Introduction

Nowadays, the advancement of science and technology has become a fundamental part of human's world. Buddhism and science have been discussed worldwide. Science begins with curiosity of human being and leads to finding by searching the answer through experimentation. The development of transgenic animals through animal biotechnology techniques has contributed immensely to human health, nutrition and economy (Singh et al., 2015). Transgenic animal is genetically engineered animal or genetically modified animal or biotechnology-derived animal that has a foreign gene through a deliberate human technological intervention either by genetic engineering or cloning techniques. Somatic cell nuclear transfer was used to produce the cloned sheep "Dolly" in 1996 (Wilmut et al., 1997). Animals have played a vital role in primary research and the use of animal models permits more rapid assessment of the effects of new medical treatments and other products. Most work within animal biotechnology has been carried out on laboratory mice, sheep and cattle and more recently on other species such as pigs, cats, goats, and horses. An extremely valuable research animal is zebrafish, an aquarium fish. In addition, dogs are used for the study of cancer, heart disease and lung disorders whereas HIV and AIDS research is conducted on monkeys and chimpanzees (Biotechnology Department, 2019). Advances in biotechnology have made it possible to reproductively clone mammals in the laboratory (Molnar and Gair, 2012; Twine, 2010). Transgenic animals have been predicted to become bioreactors, producing pharmaceutical products previously only produced in culture by transgenic microorganisms (Smith, 2004). Singh et al. (2015) added that the development of transgenic animals has been one of the most important advances during the last decades.

Kamma is one of the central concepts of Buddhism. *Kamma* is action and the effect of *kamma* is known as the fruit or the result of *kamma* (*kamma-phala* or *kamma vipāka*) and it is reaction (Nārada, 2003). According to Buddhism, the act on violating or harming any living being can have a consequent effect. Intention or *cetanā* is the heart of all intentional actions because it is the point of origin (Payutto, 2018).

"We ourselves are responsible for our own deeds, happiness and misery. We build our own hells. We create our own heavens. We are the architects of our own fate. In short, we ourselves are our own kamma."[1]

"*Cetanahaṃ bhikkhave kammmaṃ vadāmi*"

"I declare, O' Bhikkhus, it is volition that I call *kamma*, by volition one performs *kamma* through body, word or mind."[2]

Although the use of transgenic animals is mainly to promote human wellbeing, the intention of producing transgenic animals and the consequence of this action is considered as the cause and effect according to Buddhist law of *kamma*. The correlation between the experimentation on transgenic animals and Buddhist law of action (*kamma*) and especially on twelvefold action in *Theravāda* Buddhism is analysed in this paper.

The concept of Buddhist law of action (*kamma*) in relation to the experimentation on transgenic animals

Buddhism emphasizes the importance of science in dealing with the problems of morality and religions. The truth contained in the Buddhist doctrine concerned the real nature of the universe which could greatly support Science and could bring about a union between Buddhism and Science (Lopez, 2008). In fact, only science cannot cause the problems in the world. Hence, science cannot be condemned as the cause of problems. Human beings are the cause of these main problems and the origin of the problems occurring in this world is due to ignorance: greed, hatred and delusion. Ignorance arises *kamma* formation. According to Buddhism, humans have to develop wisdom and virtue at the same time. If science goes together with virtue, it will provide more usefulness and convenience to humans. Lopez (2008) claimed that Buddhism is, in fact, the scientific religion best suited for modernity throughout the world. Buddhism remains significant and necessary for human (Surasith, 2016).

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[1] *Cūḷakammavibhaṅga Sutta-Majjhima Nikāya* No. 135

[2] *Aṅguttaranikāya* III. 410.

Significant uses of live transgenic mammals are in the fields of agricultural, biotechnological, biological and biomedical sciences including production of pharmaceuticals, human gene therapy, antibody production, as disease models for the development of new treatments, blood replacement and in the field of organ transfer from transgenic animals to humans (Wall and Seidel, 1992). The advancement in transgenic technology has led to the generation of the first transgenic monkey in 2001 and a transgenic monkey model of Huntington's disease (HD) in 2008. The creation of transgenic HD monkeys that replicates key pathological features of human HD patients further suggests the crucial role of nonhuman primates in the future development of biomedicine (Chan and Yang, 2009). In addition, the first recombinant protein produced by transgenic goats was human antithrombin which was used as drug for humans (Moura et al., 2011). Transgenic pigs can be used as an animal model of human diseases like cancer, cardiovascular diseases, Alzheimer's disease, cystic fibrosis and diabetes mellitus (Aigner et al., 2010).

Several types of small mammal models have been developed of cardiovascular abnormalities that occur spontaneously or that are induced experimentally (Roths et al., 1999). Extensive research for human diseases has been done with rats, mice, gerbils, guinea pigs, and hamsters. Mice, being the mostly used, are due to genomic similarities to human and easy and developed handle and production methods low cost, and high reproductive rates. The cloning technology and genetic modification of organism can originate a new method for animal transgenesis production. Although the positive aspects were beneficial, advantageous, necessary, and progressive, there is a major concern on the issues of immoral, unnatural, unethical, harmful, personal worry, negative welfare effects, dangerous risk, tampering with nature and creation of inequalities. The public attitudes are defined by the process associated with genetic engineering rather than the product of this process and unnaturalness is one of the most important concerns associated with animal and human genetic material (Giassetti et al., 2019).

Millions of primates, dogs, cats, sheep, rabbits, pigs, birds, rodents, and other animals are routinely subjected to experiments and tests that can be described as either a torment or agonizingly lethal to them. Several million animals have been sacrificed to research since 1980 and the usual justification for this kind of testing is that it is needed to gain vital knowledge that cannot be gather by other means such as utilizing human beings in the experiments. If the test is prohibited it would seriously interfere with research that ultimately benefits humanity (Kapleau, 1981). Such explanation is a dispute issue whether we, human, are "superior" and has the right to judge animal as "inferior" that we can do anything to them.

Animal welfare problems for transgenic animals arising from intended genetic change are difficult problems to avoid. This is because the intention of inducing such change negatively affects animals. Naver et al. (2003) showed that mouse carrying the human Huntington's disease gene can suffer greatly. The suffering involves rapid progressive loss of neural control leading to premature death. While humans continue to change animals to suit their own needs, all parties in the debate agree that there should be limits to the amount of physical pain or mental stress that it is ethically justifiable to impose on an animal (Gjerris et al., 2006).

Transgenic animals arising from intended genetic change can violate animals and sometimes lead to cripples or death. Genetic modification animals used as models of human disease may suffer as they develop disease (Brunk and Hartley, 2013). In Buddhism, it is morally wrong to cause harm to animals so a person who uses animals for experimentation may have to accept the consequences of *kamma* (Richards, 2019). An understanding of the Buddhist concept of *kamma* can be very useful for encouraging humans to be more responsible and to improve their moral standards as well as refraining from unwholesome actions (Ubeysekara, 2019). Animals do experience pain and they are not things. They can be lonely, sad, and frightened, and suffer greatly (Kapleau, 1981). Therefore, we have a moral obligation to protect them from suffering in every way we can (Phelps, 2004). Based on Buddhism, killing or harming all living beings including animals could violate the first precept (*sila*). To abstain from injury to living creatures (*panatipata*) is the right action for moral conduct (Payutto, 2018).

Kamma, which plays the main part in molding of human's character, explains the marvelous phenomena of genius, infant prodigies, and so on. The world turns as a consequence of the work and activities intentionally chosen and undertaken by human beings themselves (Payutto, 2018). Thus, the understanding of law of action (*kamma*) is essential for the welfare of the world (Nārada, 2003). Considering the first precept, a complete act of killing or the destruction of any living being including animals of all kinds, constituting a full violation of the precept involves five factors, i.e. (1) a living being must be alive; (2) the perception or awareness of the living being as such; (3) the thought or volition or intention of killing; (4) the appropriate effort to kill; and (5) the actual death of the being as a result of such effort (Bodhi, 2020, Payutto, 2018). For the first precept on abstaining from killing (*pānātipātā veramanī*), *sīla* will be absent only when these five factors are complete. However, if one of these factors is missing, *sīla* is still present but may be a tainted one (Mahatthanadull and Mahatthanadull, 2015). It is also important to understand

that the violation of the precept arises in the mind, with the recognition of a living being and the willful thought of killing that being. Ordering someone else to do the actual killing does not mitigate responsibility for it. Furthermore, a killing with premeditation is a graver offense than a killing that is impulsive, such as in self-defense (O'Brien, 2020).

According to the commentaries, the severity of ill-effects resulting from killing various kinds of creatures are based on the following criteria (Payutto, 2018):

1) Degree of virtue: killing someone of great virtue has dire consequences, while killing a creature endowed with minimal or no spiritual virtues has less consequences. Killing a domestic animal is more serious than killing a wild animal.

2) Size: in regard to animals, whose merits are more or less equal, killing a large animal is more serious than killing a small animal.

3) Effort: making great effort to kill is more serious than making little effort.

4) Intention or defilement: if the intentions or defilements are strong, there are more serious ill-effects than the weak intentions or defilements. For instance, killing with anger out of premeditated hatred is more serious than killing in self-defense.

Every birth is conditioned by a past good or bad *kamma* which predominates at the moment of death. *Kamma* that conditions the future birth is *Janaka-kamma* (reproductive *kamma*) (Nārada Thera, 2020). Bannaruji (2018) described the cause and effect of *kamma*, whether it is wholesome or unwholesome, according to twelvefold action by pointing out that four types of *kamma* relating to the order of ripening are considered as priority of effect. Thus, the first priority is weighty *kamma* followed by habitual *kamma*, death-threshold *kamma* and reserve *kamma* in connection with reproductive *kamma* which will take effect depending on supportive *kamma*, obstructive *kamma* or destructive *kamma*. He also concluded that (1) good deed is supported by good *kamma* whereas bad deed is supported by bad *kamma*; (2) good *kamma* can obstruct or destruct bad *kamma*; (3) bad *kamma* can obstruct or destruct good *kamma*. *Ahosi-kamma* (ineffective *kamma*) will not give effect because it does not have the opportunity to bear fruit in time or because that person has attained arahantship.

Habitual *kamma* (*ācinna kamma*) is the action that one habitually performs and recollects and for which one has a great liking. Habits, whether good or bad, wholesome or unwholesome, become second nature and they tend to form the character of an individual. At leisure moments we often engage ourselves in our habitual thoughts and deeds. In the same way at the death-moment, unless influenced by other circumstances, we, as a rule, recall

to mind such thoughts and deeds. As an example, Cunda, a butcher, who was living in the vicinity of the Buddha's Monastery, died squealing like a pig because he was earning his living by slaughtering pigs. King *Dutthagāmani* of Ceylon who was in the habit of giving alms to the Bhikkhus before he took his meals and it was this habitual *kamma* that gladdened him at the dying moment and gave him birth in the deva Realm (*Tusita*) (Nārada, 2020).

Some people who kill other beings and get in the habit of killing (*ācinna kamma*) like Cunda, after death they will also be reborn in four lower, woeful states such as animal world, hungry ghost world, demon world and hell. However, if they are reborn as human beings, their lives will be short. For those who do not kill other beings and have compassion for other beings, they will be reborn in the deva (celestial being) realm. Some people who cause injury to other beings by the hand and the weapon, they will also be reborn in four woeful states. If they are reborn as human beings, they will be sick and prone to diseases (Payutto, 1993). On the contrary, those who do not cause injury to others will be reborn as devas or if they are reborn as human beings, they are endowed with good health. One who does *kamma* here and now, the result maybe in this life, the next life or in some life after next life (Ashin Silanandabhivamsa, 2003).

If one can understand the Buddhist concept of *kamma*, one can get many benefits as follows (Ubeysekara, 2019):

1) It will encourage individual responsibility because we are the architects of most of our life circumstances whether positive or negative, we are responsible for our own happiness and misery. It will also encourage self- reliance so one will not have to depend on prayers or offerings to some divine or higher authority in order to achieve a positive outcome or to avoid a negative outcome.

2) As *kamma* is a theory of morality with appropriate moral consequences, it will help us to improve moral standards within a society if more people begin to understand how this natural law of morality works.

3) It will act as a deterrent to unwholesome actions and encourage people to engage in skillful or wholesome actions.

4) It provides an explanation as to why there is so much inequality among human beings such as rich and poor, high class and low class, powerful and powerless, strong and weak, superior and inferior, healthy and sickly, long- lived and short-lived, ugly and beautiful, intelligent and ignorant, happy and unhappy, and so on when there is no other plausible explanation from heredity and environment.

5) Even when born into an unsatisfactory life due to a previous unwholesome volitional action, the knowledge of the *kamma* process will encourage one to use free will, choice and determination to mitigate or neutralise the negative effects of previous unwholesome *kamma*. In addition, an understanding of the natural process of *kamma* will help to avoid a fatalistic attitude to the negative effects of unwholesome actions. For instance, people with severe handicaps and other disadvantaged circumstance in life can overcome and flourish in their present life.

6) It will lead to positive and healthy personal and social relationships. An understanding of the process of *kamma* - "one reaps what one sows"- will create an incentive to avoid unwholesome actions. Hence, wholesome and meritorious actions that are beneficial to oneself and to others can be performed. This positive attitude will also help one to act through loving kindness and compassion to all living beings.

7) It will help one immensely to understand other complex concepts of Buddhist teaching like rebirth, *Nibbāna* and Dependent Origination.

Finally, by understanding the law of *kamma* it will help one to realize that one's goal should be to stop producing both wholesome and unwholesome actions as both type of actions will lead one to continue in the cycle of birth and death with all its associated suffering (*dukkha*). This goal can only be achieved by developing the Noble Eightfold Path consisting of right view or right understanding (*sammā diṭṭhi*), right intention or right thought (*sammā sańkappa*), right speech (*sammā vācā*), right action (*sammā kammanta*), right livelihood (*sammā ājīva*), right effort (*sammā vayāma*), right mindfulness (*sammā sati*) and right concentration (*sammā samādhi*) and attain *Nibbāna* in order to escape from this never-ending cycle of birth and death (*samsāra*).

Conclusions

The usefulness of transgenic animals is mainly to promote human wellbeing. However, the intention of producing transgenic animals has the consequence according to Buddhist law of *kamma*. According to twelvefold action, weighty *kamma* is the prior condition for the next birth followed by death-threshold *kamma*. Anyone who gets in the habit of harming or even killing living beings including animal will be born in the lower plane of existence such as animal world, hungry ghost world, demon world and hell or if reborn as human beings, his life will be short. This unwholesome action will lead one to continue in the cycle of birth and death (*saṃsārā*) with all its associated suffering (*dukkha*).

The solution based on morality can be resolved by restraining from harming animal if possible. A person who follows the precept (*sila*) will realize that harming animal is an unwholesome action and it is against the first precept. If unavoidable, one has to accept the consequence. Knowledge and belief in the law of action (*kamma*) is the basic requirement of Buddhists. The only way to escape from *saṃsārā* can be achieved through the Noble Eightfold Path.

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