

BUDDHIST ANIMAL RELEASE PRACTICES: HISTORIC, ENVIRONMENTAL, PUBLIC HEALTH AND ECONOMIC CONCERNS

Henry Shiu and Leah Stokes

Animal release has long been a component of Buddhist practice, although it is little studied contemporarily. This paper examines the historical roots of these rituals, arguing that they may ultimately have been adopted into Chinese Buddhist practices. A short survey of contemporary Buddhist practice in various traditions is given, including references to important scriptural authority. Practices involving large-scale, ritualized animal release is then argued to have a number of unintended negative environmental repercussions, resulting in potential new, non-native invasive species. These practices are also considered from contemporary economic and public health perspectives, culminating in the argument that their compassionate intentions are often lost in the act.

Introduction

The ceremony of 'animal release' or 'release of living beings' (Chinese: *fangsheng*; Japanese: *hōjō-e*; Tibetan: *tshé thar*) is one of the regularly performed rituals in Buddhist practice throughout Asia, and, in recent decades, in the West. At the heart of the ceremony is the freeing of captive animals into their 'natural habitat', usually understood as a means of cultivating 'compassion' (Sanskrit: *karuṇā*; Chinese: *dabei*; Tibetan: *thugs rje*), an aspect of the Mahāyāna principle of *bodhicitta*. Perhaps because the nature and purpose of the ceremony appears quite obvious, the study of ceremonial animal release, in terms of both its origin and practice, with a few exceptions, has seldom attracted the attention of Buddhist scholars (Law 1994, 325–326; Severinghaus and Chi 1999, 301–304; Williams 1997, 149–162).

A critical examination of this practice suggests two major issues: first it is problematic to regard 'animal release' as a traditional Indian Buddhist practice; second, the manner in which 'animal release' is currently performed raises environmental and ecological issues that are antithetical to the ritual's intended cultivation of 'compassion'. This second issue is already being recognized in some

Buddhist countries. In recent years, at the time of *Vesak*, the commemoration of the enlightenment and *parinirvāṇa* of the Buddha, there have been numerous appeals calling for Buddhists to eschew practising 'animal release'. For example, in 2006, Cheung Ho-fai, Chair of the Hong Kong Bird-Watching Society, called on the government to ban the release of birds, partially to minimize the danger of avian flu.¹ Similarly, the Singapore National Parks Board has instituted fines for people who release animals during *Vesak* celebrations (Wong 2006). This paper will critically explore the historical basis of the practice, while concurrently evaluating the impact of animal release in its contemporary setting.

The history of animal release

While the exact origin of the practice of releasing living beings is not clear, Chinese treatises, such as the *Wanshan tonggui ji* written by the Sixth Patriarch of the Pure Land tradition, Yanshou (904–975), usually refer to the *Fanwang jing* (*Brahmajāla; Sūtra of Brahma's Net*) and the *Renwang huguo bore boluomi jing* (*Perfection of Sūtra of Protecting the Country by Benevolent Kings*) as the scriptural sources of the practice. This text also illustrates the justification behind the practice, making the clear distinction that the practice is considered a compassionate act:

The Bodhisattvas should practice the act of releasing animals due to the mind of compassion. All men [should be seen as] one's own fathers, and all women as our mothers. Our every incarnation takes birth from them. Therefore all living beings of the six-fold [samsaric] realms are our parents. To kill them and eat them is to kill our parents and our former bodies. All Earth and Water [elements] are our former bodies, and all Fire and Wind [elements] are our essence. One should therefore always practice the release of animals, and cause others to practice. If one sees someone killing animals, one should properly save and protect them from suffering. [In addition,] one should also disseminate and teach others the Bodhisattva-*vinaya* in order to save the living beings.²

In addition to the *Fanwang jing*, the *Renwang jing* is often named as one of the scriptural sources supporting the practice of 'animal release'. However, the text itself has no direct reference that encourages the practice; it is only at the very end of this text that one finds a brief allusion to 'animal release', counselling that one should 'protect the body of all living beings' (*Taishō* no. 245, 831). It should be pointed out, however, that modern scholars typically view these two scriptural sources as Chinese apocryphal works (Buswell 1990, 9). The significance of this claim will be further discussed below.

In addition to these Chinese sources, the *Suvarṇabhāsottamasūtra* (*Sūtra of Golden Light*) is also claimed as a canonical source of the practice; this claim is often referred to in Chinese treatises, such as the *Fayuan zhulin* (*Pearl-Grove of the Garden of Dharma*). In the *Sūtra of Golden Light*, we find the story of Jalavāhana, a man who used 20 elephants to help carry water to a pond where 10,000 fish deprived of sufficient water were living (Emmerick 1970, 78–81). While this source

is often made reference to in animal release practices, it is clear that the passage emphasizes the compassionate act of saving the lives of fish dying in a pond, not the release of those captive fish back into their natural environment; this distinction between animal release and acts of compassion towards animals is important in many cases. Other Buddhist works caution Buddhist monks not to hurt small insects while collecting water from rivers. Related to such a practice are monastic codes, as found in the Chinese translation of the Sarvāstivādin codes, the *Genben saboduobu lushe*, that instruct monks to use fine cloth to filter small insects from the water into a container (*fangsheng chi*), in order to gather and release them back into the river (*Taishō* no. 1458, 589). Yijing, in the memoir of his visit to India, the *Nanhai jigui neifa chuang*, comments that he witnessed Buddhist monks practising just such a careful action towards small insects when drinking water (*Taishō* no. 2125, 208).

Despite the consistency in these passages, they are not indicative of the origin of animal release practices in Indian Buddhism; instead, these passages refer both to the practice of 'protecting the lives of living beings' (*hushing*) and the principle of 'non-violence' (*ahimsā*). It is also likely that such monastic practices were observed for hygienic reasons. It is critical to notice the difference between this ritual and the release of captive living beings in a ceremonial ritual, which does not necessarily arise from the notion of *ahimsā*. Again, the important distinction in question is found in the difference between refraining from killing or harming (*husheng*) and the practice of releasing living beings (*fangsheng*). Although the two concepts are clearly related, they should not be confused, as they often are when citing scriptural authority for modern animal release practices.

After addressing the challenge in distinguishing 'animal release' (*fangsheng*) from other acts of compassion towards animals, it becomes apparent that the earliest description of animal release rituals we can find is not from a Buddhist source, but from a Daoist work known as the *Liezi*. The passage in the *Liezi* reads as follows:

The people of Han-tan presented doves to Chao Chien-tzu on New Year's morning. He was delighted and richly rewarded them. When a visitor asked the reason, Chien-tzu explained: 'We release living things on New Year's Day as a gesture of kindness.' [The visitor replied]: 'The people know you wish to release them, so they vie with each other to catch them, and many of the doves die. If you wish to keep them alive, it would be better to forbid the people to catch them. When you release doves after catching them, the kindness does not make up for the mistake.' 'You are right,' said Chien-tzu. (Graham 1960, 178)

It is generally agreed that the *Liezi*, like the *Laozi* and the *Zhuangzi*, is of multiple authorship, and the work in its present form can be, at the latest, dated to the third century CE. Since the translations of both the *Fanwang jing* and the *Renwang jing* were ascribed to Kumārajīva (ca. 344–413), it follows that the *Liezi* appeared earlier than these two texts. Even if, contrary to the findings of modern

scholarship, both of these texts are not indigenous Chinese apocrypha, they could not have been available to the Chinese until the late fourth century at the earliest, making *Liezi* the earliest known source of the ritual. It should be noted that scholars have proposed different categorizations of Chinese Buddhist apocrypha. For example, Mochizuki Shinkō listed five types of apocrypha, with the *Fanwang jing* and the *Renwang jing* under the same group of texts described as 'texts teaching national protection (*hu-kuo*), which outline the Mahāyāna precepts and/or the Bodhisattva mārga' (Buswell 1990, 9). According to this analysis, the only early references to the practice of animal release are found in the *Fanwang jing* and the *Renwang jing*, along with the Daoist work *Liezi*. If we are to accept the general scholarly assumption that these two Buddhist texts are indigenous Chinese apocrypha, we must arrive at the conclusion that animal release originates as an indigenous Chinese cultural practice, rather than as a Buddhist religious ceremony or spiritual practice. Joanna F. Handlin Smith also concluded in her article that 'the twin activities—the liberating of animals and the avoidance of killing—had acquired layers of meanings, many of which were not essentially Buddhist' (Smith 1999, 78).

According to such an argument, since the arrival of Buddhism in China this cultural practice has been given a Buddhist meaning; subsequently, Buddhists in China produced apocryphal *sūtras* that justify such a cultural practice as a Buddhist act. Since the intention behind the practice of animal release resonates well with the Buddhist notions of 'compassion' (*karuṇā*) and 'non-violence' (*ahimsā*), it is not surprising that Chinese Buddhists adopted animal release as one of their most regularly practiced rituals. The Chinese masters throughout the centuries have encouraged their followers to participate in this practice. To this end, William Chu makes an interesting comment:

The wide popularization of versions of Bodhisattva precepts that were based on apocrypha coincided with certain medieval developments in technology and social/political developments. All these changes facilitated a much more pervasive 'Confucianization' of Chinese society, notably during the Song dynasty (960–1279), and were accentuated in the Ming (1368–1643). Riding on these trends, it was only natural that the apocryphal Bodhisattva precepts that were so much tailored to Confucian ethical norms found a much greater popular basis at the same time. . . . Apocryphal scriptures played a crucial role in transforming and redefining Buddhism for its Chinese recipients. (Chu 2006)

As per this observation, if 'animal release' is an indigenous Chinese practice, it would not be surprising that the only instances where this practice is mentioned in Buddhist works is in Chinese apocryphal compositions. Such is the case here, where the apocryphal *Fanwang jing* and *Renwang jing* played an important role in transforming and redefining Buddhist practice. What might be considered surprising is that this Chinese cultural practice, under the guise of being a Buddhist ritual, subsequently took root in Tibet, Japan, Korea, Sri Lanka, Thailand, and, in the modern times, Taiwan. In Taiwan, the practice has become so popular

that not only Buddhist and Daoist groups are found to observe the practice regularly, but also Catholic and Protestant groups, as well as the folk religions in Taiwan and the cultic tradition I-kuan Tao (Severinghaus and Chi 1999, 302).

The history of animal release in China

In China, the practice of animal release has been popular for centuries, and is most closely related to the Tiantai and Jingtu (Pure Land) traditions. For example, the Tiantai Master Chiyi (538–597), inspired by the passage in the *Suvarṇabhāsottamasūtra*, built the first ‘pond for releasing living beings’ (*fangsheng chi*). It is said that Chiyi, having observed that the fishermen around the Tiantai region had accumulated negative *karma* by the taking of lives, bought a piece of land and transformed it into a pond to encourage the fishermen to release their catch alive therein. He later purchased more than 60 fishing ponds and transformed all of them into ‘ponds for releasing living beings’. During the ceremony for releasing the beings, Chiyi would preach the Dharma of the *Lotus Sūtra* and the *Sūtra of Golden Light* to the fish that were about to be released. As a result, the practice of releasing animals, along with the characteristic Tiantai threefold contemplation of *śamatha* and *vipaśyanā*, has been a major part of Tiantai practice.

During the period of the Tang dynasty (618–907) until the Ming dynasty (1368–1644), the practice of animal release became increasingly popular in China. At that time, encouraged by the Buddhist masters of various schools and supported by the emperors, many more ponds were built and lakes transformed, for this purpose. Zongmi (780–841), in his *Foshuo yulanpen jingshu*, also makes a passing reference contrasting Confucian practice of animal sacrifice as an offering with and the Buddhist practice of animal release (*Taishō* no. 1792, 505), which could be interpreted as evidence that the practice was widely practiced at this time. In the Song dynasty (960–1279), for example, the now-famous tourist attraction West Lake in Central Hongzhou was officially proclaimed by the emperor in 1018 CE as a ‘pond for releasing living beings’. Since the Song dynasty, the practice of animal release has become a crucial part of the Jingtu practice; furthermore, with the assimilation of the Chan and Jingtu traditions, Chan also adopted from the Jingtu School the release of captive animals as one of its focal practices. In addition to the Sixth Patriarch Yanshou mentioned above, Master Lianchi (1535–1615), the eighth patriarch of the Pure Land tradition in China, was especially well known as a tireless advocate for the release practice, having composed the celebrated *Fangsheng yi* (*Manual for Releasing Living Beings*) and the *Jiesha fangsheng wen* (*Writing on Refraining from Killing and Practising the Release of Living Beings*), in addition to building two ponds at Shangfang and Changshou. The Ninth Patriarch Ouyi and the Thirteenth Patriarch Yinguang were equally famous for their constant emphasis on the merits of animal release. These figures illustrate the development of the importance of the practice in Pure Land Buddhism in China.³

A brief description of the traditional practice

The motivation of practitioners participating in animal release has several dimensions. Often, there is a private concern for the well-being and longevity of the practitioners and their relations, living or dead, in addition to the explicit theme of demonstrating and cultivating compassion for other forms of living beings. Traditionally, this practice includes the belief that accumulation of merits for health and longevity can be transferred to beloved ones, including those who are ill and have already passed away.

In practice, the ritual ceremony varies, as there is a lack of standard manual for carrying out the ritual. For example, many Tibetan masters, such as the late Jamyang Khyentse Wangpo (*'Jam dbyangs mkhyen brtse'i dbang po*, 1820–1892) and Mipham Gyatso (*Mi pham rgya mtsho*, 1846–1912), have written their own liturgy for their followers to employ in ritual. Although these texts vary, Tibetan liturgy on the practice typically follows the standard structure of a tantric Generation Stage (*bskyed rim*), asking the practitioner to visualize oneself as a particular deity and bless the animals being released. Another modern-day account of a Tibetan ritual describes the animals being carried around a ritual table 40 times while others recite prayers. This stage prior to the release is meant to 'imprint [the] teachings for their future lives' (de Bien 2005). Similarly to the Tibetan case, there is no common liturgy for animal release in China or Japan. However, in the case of China, various liturgies share some common characteristics. Often, these rituals are performed by a head monk who exhorts the participating crowd to first take refuge in the Bodhisattva Avalokiteśvara, which is followed by the recitation of the *mantra* of the Thousand-Armed Avalokiteśvara and the *Heart Sūtra*. The head monk then invites the Buddhas to the gathering, and preaches the doctrine of dependent origination and the law of *karma* to the animals, leading the crowd to take refuge in the three jewels on behalf of the animals. The practice concludes with granting these animals two wishes: first, after being released they will not be caught by fishermen or hunters; second, they will be reborn as human beings in their next lives in order to perfect the teachings they have heard and tread the Bodhisattva path. After, the participants make a final wish for themselves: that through such a practice they will make progress on the path towards Buddhahood. The name of Buddha Amitābha is then recited a number of times before the entire practice is completed with the dedication of merits.

Like the variety of methods for conducting the ritual, the type of animals usually released also varies from birds to turtles to fish and crabs, and even to little ants. In the modern practice, it is usually the release of birds and turtles that are most popular, perhaps because turtles, to the Chinese, symbolize longevity, and the release of birds creates an impressive effect at the completion of the ceremony. However, due to the lack of systematic study on the subject, it is possible that other animals are released more frequently than our survey of the literature suggests.

Modern-day animal release practices

A variety of factors contribute to a lack of systematic knowledge on modern-day Buddhist ritual animal release practices. As mentioned, this topic has been neglected by Buddhist scholars, resulting in little research or data collection on the role this ritual plays in different traditions. Secondly, the lack of clear sources or root texts underlying the practice compounds the challenge of attempting systematic research. Finally, Buddhist groups may be reluctant to discuss this ritual with researchers, possibly for fear of legal repercussions.

Although it is clear that these rituals are being conducted in countries and regions throughout Asia, such as China, the Tibetan Autonomous Region, Thailand, Cambodia and Taiwan, there is also evidence that the practice is being performed in western countries, including Canada and Australia. In the case of Canada, there are reports of Buddhist organizations in both Toronto and Vancouver engaging in the practice regularly. Individuals engaged in these rituals come from a variety of traditions, including Pure Land and Tibetan Buddhism.⁴ It is unclear which Buddhist traditions place greater emphasis on this ritual; although Sherwood, in her survey of Australian Buddhist communities, suggests 'Tibetan groups are particularly active in the release of animals facing death, as they hold the worldview that this has profound effects on transforming the karma both of the being facing death and of the one who releases it' (Sherwood 2001, 71). She also reports finding no Theravādin organizations in Australia engaging in 'animal welfare projects', a category that includes animal release. This suggestion is echoed by a Vajrayana practitioner in Australia who claims that animal liberation 'is a particularly profound and important practice in Buddhism, especially Tibetan Buddhism' (de Bien 2005).

At least in Canada and Australia, the current evidence suggests frequency of release tends to vary depending on the tradition in question, with Pure Land organizations releasing on a monthly basis, and Tibetan organizations favoring bi-yearly or yearly release. However, this trend is only evident in a half-dozen Buddhist groups in Canada and Australia; clearly a much larger survey must be conducted in order to verify these results (Mohan, personal communications). In the case of one Pure Land temple in Vancouver, British Columbia, the ritual has been conducted for 13 years, with the organization claiming to have released a total of 25,000 pounds of sea creatures into the Pacific Ocean. The Reverend at this temple also returns to China on occasion to participate in release rituals, suggesting the practice of the ritual in Canada may remain connected to ongoing practices in Asia.⁵

As this practice changes cultural contexts, there may also be a reinterpreting of the ritual. This is seen in the case of Australia, where, according to Sherwood, 11% of Buddhist organizations have 'animal welfare programs'. Some of these activities are far closer to traditional practices of animal release, such as the Buddhist Council of Victoria's efforts to release live bait and other animals. However, other groups are involved with less conventional forms of animal release, as is the case with

The Hospice of Mother Tara, a group that purchases and releases battery farmed hens, dogs from pounds and even farm animals (Sherwood 2001, 11).

Apart from the section in Sherwood's survey of Buddhist groups engaged in social welfare in Australia, the only systematic study of animal release conducted and published to date occurred in Taipei, Taiwan in August 1999. Severinghaus and Chi interviewed 1040 randomly selected adults concerning their level of engagement in animal release practices, while also collecting relevant personal data. This study found that 29.5% of citizens living in Taipei have released prayer animals, with 64.4% of this group releasing individually, without a religious organization. In general, the survey found women with lower education and wealth were the most likely to engage in this ritual. Interestingly, the study also found that 'people who thought released animals would not survive were less likely to participate in ceremonial releases' (Severinghaus and Chi 1999, 302). Despite the thorough nature of this survey in Taiwan, large gaps remain in the study of animal release, including who participates in these rituals, where they release, how frequently and what type of animals are being released. This last question is particularly relevant to an assessment of the biological effects of release, a topic this paper will discuss shortly.

Ethical problems

As this ritual increases in popularity, the demand for animals to release also increases, leading to the commercialization of the practice. Very often, the animals to be released need to be specially ordered for this ceremonial purpose, which logically involves catching otherwise free animals. Today's modern reality reflects the wisdom of the previously cited passage from the *Liezi* in which the minister warns the emperor encouraging the ritual that it creates a demand for more animals, increasing the supply. Williams clearly illustrated this ethical dilemma in his study of animal release in Medieval Japan:

Taira Masayuki's research has shown that in the medieval period, the shrine was extremely concerned about having enough fish and clams to release (usually in the range of one to three thousand). Thus, more than triple the number were captured several weeks ahead of time to ensure that enough animals would be available by the time the state envoy arrived. In other words, if three thousand fish were to be released at the *hōjō-e*, a total of nine thousand would need to be captured and purchased by the shrine with the understanding that two-thirds of them might die before they could be released. (Williams 1997, 155)

As this example illustrates, institutionalized or regular practice of animal release creates a need to capture animals. Such capture causes the deaths of animals, possibly outnumbering those eventually released during the ceremony, in a direct contradiction to the intention of the practice.

In modern times, if the bird supply is not abundant enough to fulfil the monthly practice of animal release, birds have to be brought in from other regions

or countries. In an article published in 2004 by the Environment & Animal Society of Taiwan, it is reported that, among the 155 pet stores all of Taiwan, 63 of them supply birds of more than 35 species to the Buddhist organizations for ceremonial release purposes.⁶ The article, entitled 'The Reality of Catching, Buying and Selling Birds for Releasing' (*Fangsheng liao buzhuo maimai zhenxiang*), gives a detailed description of the cycle of catching and releasing birds for animal release purposes with the following steps: orders are made by the Buddhist organizations; hunters catch birds; wholesalers collect the captive birds; birds are sold to the retailers; retailers sell birds to Buddhist organizations; birds are released in a ceremony; and hunters wait to catch the released birds. As this case clearly illustrates, the practice is unlikely to have its intended effect of liberating captured animals; similar cases of hunters waiting nearby have been reported in Cambodia (Sipress 2006) and in Australia (de Bien 2005). Apart from the issue of recapture, there is often high mortality of the animals used in the practice. A news article from the Chinese newspaper *Sing Tao Daily* reported that 8000 birds were found dead in the Baiyun area in Guangzhou, a place where many people go on weekend mornings to release birds and pray for merits.⁷ According to the Institute of Supervising Animal Epidemic Control of Guangzhou, the death rate of released birds is 90% or higher. Taking into consideration the entire process of ordering, shipping, and keeping the animals until an auspicious day, in addition to the possibility that animals will be released into a non-native environment, the ritual results in an abnormally high death rate.

In addition to concerns over the health of the animals being released, there are implications for human health. Many aggressive diseases are passed from animals to humans, as was the case most recently with avian flu. The possibility of transferring the virus to humans becomes much greater when animals are kept in close proximity to humans, as one finds in ritualized animal release. Such high risk has led researchers with the Wildlife Conservation Society to test for the virus in to-be-released birds on temple grounds in Cambodia, cautioning that the practice is 'comparable to the danger posed by live poultry markets blamed for several Asian outbreaks of the highly lethal H5N1 strain of bird flu' (Sipress 2006, A15). In Hong Kong, it has been found that the introduction of unvaccinated birds is currently occurring at an alarming level. The discovery of the avian flu virus in a dead spotted munia in a crowded district in Hong Kong in early January 2007 became a warning signal that the practice of releasing birds may have unintended consequences (Benitez 2007, A3). In response to the fear of an epidemic, Richard Corlett, Professor of Ecology and Biodiversity at the University of Hong Kong, commented that a complete ban on releasing birds was preferable. Corlett went on to cite a postdoctoral study conducted in 2005 that estimated between 500,000 and one million birds are imported into Hong Kong for release every year.⁸ Transferring animals from one region to another increases the likelihood of avian flu being spread, particularly if these animals are coming in close contact with groups of humans, as may be the case with ceremonial animal release.

The potential for novel mutations and increased virulence is amplified with the introduction of a virus into new and expanded environments.

The question of introducing invasive species

The practice of animal release has significant implications for research on introduced invasive species, a growing focus of biological conservation. A non-native invasive species is an organism that has successfully established itself in territory outside its native environment, often spreading with few biological checks. Conversely, a native species can be defined as one living in its place of origin, and therefore that has evolved within set environmental limitations. When biologists refer to a native versus a non-native species, they are contrasting both the period of time in which an organism has existed in a given place and the role that humans may have played in the spread of that species. Thus, an organism existing in a given place, which became established through natural dispersal, generally thousands of years ago, can be considered a native species. In contrast, non-native species are usually introduced via human vectors to become established in a geographical region outside their natural range. Like Buddhist teachings on interdependence suggest, native species have evolved in context and are thus most suited to their current ecosystem. For the purpose of this paper, we will consider invasive species to be a result of non-native introduced species; in reality, native species may also become invasive when environmental conditions change, but this topic is outside the scope of our research.

Today, many scientists consider the impact of invasive species worldwide to be a major driver of global human-caused change alongside, for example, climate change and land-use change (Vitousek et al. 1997). The International Union for the Conservation of Nature and Natural Resources (also referred to as the World Conservation Union) released its 'Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species' in 2000.⁹ This document specifically cautioned against the 'intentional introduction' of non-native species, stating it is of a 'very high priority' to establish appropriate institutional mechanisms as part of legislative reforms on invasives to prevent such introductions. A study conducted by the Endemic Species Research Institute in Taiwan also quoted the International Union for the Conservation of Nature and Natural Resources Guidelines, and pointed out animal release has been the major source of intentional introduction of invasive species in Taiwan.¹⁰

Ultimately, the proliferation of non-native invasive species involves a number of key steps including transportation, introduction, establishment and spread (Duggan 2006, 377). The area most relevant to this paper includes, chiefly, introduction of organisms into non-native environments, but also concerns the transportation of species from different regions. Although historically such introductions have been related to hobbyists and aquarium release (Duggan 2006, 380), religious practices of animal release are increasingly being recognized as an important vector for introduction (Kerr 2005, 25). Since the success of an invasive

species is dependent upon a 'viable propagule', defined as the smallest number of individuals necessary to reproduce and colonize a new area, the systematic release of animals in large numbers, with a high frequency in a given area, greatly increases the likelihood of an invasive species establishing itself. These characteristics are typical of ritualized animal release, and it has already been recognized by biological researchers working in Hong Kong that deliberate, large-scale release by Buddhists is highly likely to have facilitated the establishment of invasive birds in the region (Leven 2004, 49). In particular, the researchers conclude that the invasions of 18 species since 1860 are highly likely to have occurred because of deliberate release of caged birds, in large part by Buddhists (Leven 2004, 53–54).

Assessing the environmental risk associated with animal release is challenging, since the potential for a species to become invasive is entirely dependent on the type of species and where it is being released. In the case of the Vajrayana Institute in Australia, the organization checked with their Ministry of Agriculture and Fisheries before performing the practice and used a local species caught in the nearby harbour (de Bien 2005); however, such careful biological deliberation prior to release is the exception rather than the rule. For this reason, information for Buddhist groups and individuals on which species should and should not be released needs to be conducted at the local level. Ideally, this research could be carried out systematically with temples self-reporting their participation in these rituals, frequency of release and specifying species. However, the few researchers who have attempted this type of research have been met with substantial resistance from both religious groups and individuals (Severinghaus and Chi 1999, 301; Sipress 2006, A15). This may only intensify as information about the harmful effects of the practice becomes more widespread alongside legal or regulatory efforts to prevent introduction of invasive species. But despite these challenges, action is necessary on this issue to prevent significant 'biological pollution'; the risk is particularly acute in the Tibetan Autonomous Region, an area that is regarded within the scientific community as having few, if any, invaders at present. While this may be due to the harsh environment and robustness of native biota, it may also be a function of the isolation of the Tibetan ecosystem, and consequently, the flora and fauna of the region may be particularly vulnerable to new invasions by introduced species (Mack 2000, 695; Wang 1988).

Apart from Hong Kong, there are other documented cases of animals released in connection with a Buddhist ritual that have impacted local wild populations. Although this evidence is not typically direct, according to Severinghaus and Chi, this is partly a result of lack of cooperation between researchers and practitioners. Still, these authors claim 'the loss of genetic uniqueness due in part to the release of prayer animals is already evident in Taiwan in some species' (Severinghaus and Chi 1999, 303). Species at risk in Taiwan include the endemic Styan's bulbul, which is hybridizing with the non-native Chinese bulbuls. These researchers also report that the non-native Brazil turtle is now the second most common turtle in all of the rivers surveyed in 1996 (Severinghaus and Chi 1999, 303). An article from *Guangzhou Daily*

in April 2006 echoes this finding: Brazil turtles released into a local lake in Guangzhou, China have led to the near extinction of the turtles native to the lake.

As governments become increasingly aware of the threat posed by invasive species, strict legislation is being passed and enforced in order to curb the environmental impact of this practice. Singapore's National Parks Board has been taking action on this issue in the past three years, monitoring release rituals during the *Vesak* period. This has resulted in a dramatic drop in the practice; 44 cases in 2004, seven cases in 2005 (Wong 2006), and five cases in 2006. In addition, park rangers can fine individuals up to \$50,000 or place them in jail for as long as six months as a penalty for releasing or attempting to release animals into the wild (Tan 2006). Importantly, research is uncovering that the frequency and number of introductions is related to the availability of the species sold alive in stores (Duggan 2006, 380). Accordingly, the Ontario Ministry of Natural Resources is working to enforce recent provincial laws prohibiting the live sale of key species at risk of becoming invasive. Such a strategy ensures that individuals unaware of the environmental or legal repercussions of animal release do not have access to the most virulent invaders. This is particularly important in the context of ritualized animal release, which probably involves individuals who are not capable of identifying native and non-native species, and may not be aware of the risks posed by invasive species.

Interestingly, one scholar, Cathy J. Byrne, has recently taken up the question of the ethics of killing invasive species from a Buddhist perspective. She poses the question, based on a case of an invasive frog in Australia, asking 'on what grounds do we kill off one amphibian to protect another (native frog)?' (Byrne 2006, 124), proceeding to implicitly question the definition and value of biodiversity. Yet, in the same essay, and quoting Joanna Macy, Byrne argues for the value of the ecosystem as a whole, what is often referred to as the 'Gaia principle'. This is the same argument that scientists are making when they assert that biodiversity is essential for the maintenance of ecosystem functioning and the long-term integrity of natural environments (Hooper *et al.* 2005). None of this is to argue that Byrne is contradicting herself; quite the contrary, she raises nuanced arguments arising out of human-caused introductions and questions what actions should be taken once a virulent invader is established. Further, and more to the point, it is the *prevention* of invasive species in the first place that eliminates the complicated ethical questions that follow, both for conservation biologists and, as Byrne points out, for Buddhists. With this in mind, the reduction or changing of current animal release practices would be wisely following the precautionary principle.

Solutions to the problems of animal release as it is currently practiced worldwide do not necessarily point to a complete banning of the practice, as is being enforced currently in Singapore. Indeed, the case of the Vajrayana Institute in Sydney, Australia is one example of a Buddhist organization engaging in the practice within the laws of the country, mindful of the possible negative harm caused by the practice, and careful to consult with local authorities to choose an appropriate species for the region. But even in this case, the economic ironies

of the practice are visible: 'there are quite a few fishermen down here on this mild Sunday morning, and presumably they'd like nothing better than to grab a few free mud crabs after we've gone' (de Bien 2005). Coupled with the reality that, from an economic perspective, purchasing the crabs in the first place is a demand for more to be caught, there remain unintended consequences of this compassionately intended ritual.

Perhaps another solution, which avoids these issues, could come through partnerships forged between local, community-based organizations working on conservation and Buddhist organizations planning to complete the ceremony as a compassionate act. The funds from such a practice, instead of supporting further trapping and importing of exotic species, might work to increase numbers of native species in decline through appropriate release aided by conservationists. In a different context, such a partnership has already been successful in Toronto with local Hindu organizations and the Toronto and Region Conservation Authority. In this case, ritual offerings of material items to river areas in the Toronto region had the potential of polluting the watershed. Through the collaboration of these and other groups, the environmental implications of this practice were effectively explained to community members, through pamphlets written in practitioners' native language. At the same time, the project acknowledged, 'religious offerings are important to many cultures ... [we] are working closely with the Hindu community to find other means to placing offerings in the river, while also exploring similar cultural and religious offering practices' (Mohan 2006). The campaign has thus far had success, reducing damage to the environment in the critically important watershed, while accommodating the religious practice.

In a similar vein, the Authority is now exploring ways to partner with Buddhist organizations and examine alternatives to current practices of animal release. Ultimately, the practice of animal release comes from a place of positive intention, and perhaps this compassionate act could fulfil its objective more effectively if it was mindful of some of the negative implications, including the environmental, economic and health issues outlined in this article.

Conclusion

As is clear from this article, further systematic studies of this contemporary Buddhist practice are critical for understanding its importance within the tradition worldwide and its potential implications for other fields. Knowing the harm and the dangers inherent in the practice of animal release for both animals and the environment, it begs the question whether the continuation of the ceremonial release of living beings in its current form is truly a cultivation of compassion. Buddhism is often flippantly categorized as a 'pro-environmental' religion, but as Williams' research has already demonstrated, in many cases this may be a simplistic understanding of the issue. As climate change accelerates in the coming years, many scientists are concerned that invasive species will pose an even greater risk to the stability of ecosystems; in such a world, it is better to listen

closely to the cautionary tale. Perhaps animal release has become a ritual that encourages practitioners to have greater concern for their own 'accumulation of merits' than for the welfare of those living beings that are released. Or perhaps it is simply a matter of nurturing local knowledge and education while changing legislation to help curb or modify a practice that is currently an environmental, economic and public health concern.

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NOTES

1. See the news in the local Hong Kong newspaper *Orisun*, 29 April 2006.
2. *Taishō* no. 1484, 1006. Duncan Ryūken Williams also mentions that Japanese Buddhist monks such as Keishu also took this scripture as the canonical source of the *hōjō-e* practice and commented on this passage in his *Hōjō jissai katsuma giki*. See Williams (1997, 150).
3. For a detailed study of the development of the practice of animal release in China, especially during the Ming and Qing dynasties, see Joanna F. Handlin Smith (1999).
4. For information on Toronto see the Toronto and Region Conservation Authority 'Live Fish Release Research Project' report in progress; personal communications with Larissa Mohan; see <http://www.trca.on.ca/>.
5. In the case of Vancouver, there is evidence that a Buddhist temple regularly conducts the practice; see <http://www.buddhisttemple.ca/involvement/international.htm>; INTERNET.
6. See <http://www.east.org.tw/01/link3-32.htm>; INTERNET.
7. *Sing Tao Daily*, 1 November 2005, citing a report from the Guangzhou local newspaper *Nanfang Dushi Bao* of the same day.

8. *Ibid.* There is also an independent report on the practice of illegally introducing uninspected birds into Hong Kong from Guangzhou in issue 879 of *Next Magazine* (11 January 2007) (available from <http://next.atnext.com/template/next/front.cfm>; INTERNET).
9. See <http://www.iucn.org/themes/ssc/publications/policy/invasivesEng.htm>; INTERNET.
10. See <http://e-info.org.tw/issue/biotech/issue-biotech00111501.htm>; INTERNET.

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Henry Shiu, Department of Humanities, Room 332A, University of Toronto
Scarborough, 1265 Military Trail, Toronto, Ontario, Canada M1C 1A4.
E-mail: henry.shiu@utoronto.ca

Leah Stokes, 18 Glenorchy Road, Toronto, Ontario, Canada M3C 2P9.
E-mail: leah.stokes@utoronto.ca