

Chinese wildlife trafficking networks along the Silk Road

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Wildlife crime and globalization

The illegal wildlife trade has become a serious criminal enterprise, following in the footsteps of drugs and weapons. In the context of globalization, opportunities for wildlife trafficking have substantially increased in recent decades (Haken, 2011; Zimmerman, 2003). Several authors highlight that advances in transportation and telecommunications, including the infrastructure of a diversity of lines and faster connections provided new opportunities for different forms of trafficking (e.g., Galeotti, 2014; Varese, 2011), including wildlife trafficking. The illegal trade in wildlife not only is one of the most lucrative trades in the world but also causes serious security issues (Van Uhm, 2018a) and produces both social and ecological harm (Sollund, 2017; Van Uhm, 2017). In particular, the illegal flow of animal and plant products for traditional Chinese medicine (TCM) seems to be substantial within the global wildlife market (Petrossian et al., 2016; Van Uhm, 2016a, 2016b).

Since China is one of the major players in the illegal wildlife trade (e.g., UNODC, 2013), the plans for the improvement of the Silk Road, the ancient trade route that ran between China and the West since the days of the Roman Empire, may provide new opportunities for both legitimate *and* illegitimate actors. During the presentation of China's One Belt, One Road (OBOR) initiative, President Xi Jinping announced that the Silk Road, known as the way oriental silk first arrived in Europe, would be resurrected. To reopen channels between China and its neighbors in the west, the initiative will encompass both the terrestrial and maritime routes connecting Asia with Africa, the Middle East, and Europe with the goal of improving trade relationships in the region, primarily through infrastructure investments. China's modern Silk Road is believed to be the start of "a new era of globalisation" (Phillips, 2017).

In this chapter, I will focus on the illegal trade in TCM along the terrestrial and maritime Silk Road that connects China with Europe. First, I will examine the criminalized trade in products from endangered species used for TCM. Second, I will describe the illegal trade in TCM along the Silk Road in Asia,

East Africa, and Europe. Finally, I will discuss the organization and diversification of organized crime groups into wildlife trafficking along the Silk Road.

The criminalization of traditional Chinese medicine

China's relationship with medicinal animals and plants dates back to the era of the legendary Yellow Emperor of China (2698–2598 BCE). The foundations of TCM, *Zhōng Yī* (中醫), were developed on the basis of yin and yang, the five elements “*Wu Xing*” (五行), and pathogenic factors from the external environment, “Qi” (Coggins, 2003; Jia, 2005; Xu and Yang, 2009).¹ In order to prevent or cure symptoms, medicines are used in the context of the balance between the body, the spirit and the external environment (Maciocia, 1989). “Harmony in life” is a central aspect of TCM, and treatments are carried out to increase the body's natural defenses (e.g., Maciocia, 1989; Tymieniecka, 1984, 2012; Xu and Yang, 2009). This is why elements from nature are important in Chinese medicine; using elements from the wild (e.g., plants or animal-derived medicine) can restore the imbalances that have given room for the disease.

The growing global popularity of TCM has, however, increased the threat to certain endangered animals and plants.² As a result of a sharp decrease in inflation between 1995 and 1999 in China, there is a rapidly expanding middle class with the ability to purchase expensive TCM containing endangered species (Nooren and Claridge, 2001; Yiming and Dianmo, 1998; Zhang et al., 2008). For many people, TCM is a very fundamental form of medicinal practice and has proven its value in the past (Schroeder, 2002).³ Besides its curing effects, consuming medicine derived from endangered species is also a cultural symbol of status and pride (Swan and Conrad, 2014). The more dangerous, powerful, and exotic species such as tiger and rhinoceros are considered to have greater medicinal value (Nooren and Claridge, 2001).

Although thousands of animal and plant species are legally used in TCM, some medications contain animal elements from endangered species, which have been criminalized in recent decades. For instance, TCM that includes tiger bone (since about 500 ce) or rhino horn (since about 200 BCE) has been criminalized after more than 1,500 years in use (Mainka and Mills, 1995; Martin and Martin, 1982). In 1981, China signed CITES and implemented its legal framework in national regulations to control the trade in endangered species (Yiming and Dianmo, 1996).^{4,5} Since that time, it has been prohibited to hunt, catch, or kill species under first-class protection or to sell or purchase them.^{6,7} The sale, purchase, or utilization of second-class species is allowed if “necessary”, but the unit concerned must apply for approval at the department of wildlife administration under the government of the relevant province.⁸ In 1993, the State Council of China prohibited the entire sale, purchase, transport, carrying and sending, manufacture, or import and export of medicines

based on tiger bone and rhino horn products or claiming to contain these.⁹ While CITES and the Chinese protection lists impose a restriction on the trade in wildlife,¹⁰ Swan and Conrad (2014) observed that these attempts to protect endangered animals may conflict with essential Chinese values concerning the provision of health care, especially given that the demand for wild-harvested materials, such as tiger bones and rhino horns, are higher than that for cultivated materials (Von Moltke and Spaninks, 2000; Van Uhm, 2018b).

Box: Endangered species used in traditional Chinese medicine

2.1 Tiger bones

Historically, tiger bone was one of the most important ingredients in TCM (Dinerstein et al., 2007). Tiger bones, *Hǔ Gǔ* (虎骨) in TCM, are used to cure ulcers, rat-bite sores, abdominal pain, typhoid fever, malaria, and hydrophobia, but especially to combat muscle cramps, migratory joint pain, pain in the bones, and rheumatism (Bensky and Gamble, 1993, p. 167; Ellis, 2005). The recommended daily dosage ranges from 3 to 6 grams.¹¹ The yellow bones from males are said to be the best to strengthen the patient's bones (Ellis, 2005). Tiger bones are used in medicinal wines, as powder, or in pills and toasted in oil or vinegar before use (Bensky and Gamble, 1993). At one time, the tiger (*Panthera tigris*) population was spread all over Asia, from Turkey to the Russian Far East (Nowell and Jackson, 1996). During the last century, three out of the nine tiger subspecies have disappeared: the Caspian tiger, the Javan tiger and the Bali tiger.¹² The population of tigers consisted of around 100,000 in the early 1900s, while in the 1990s, 5,000–7,000 specimens remained, and the current population is estimated to be only 3,200 wild tigers. The remaining population lives in the latter parts of the tiger's original habitat; nearly 93% have now gone (Abbott and Van Kooten, 2011; Chundawat et al., 2011). Though habitat degradation is an important cause of the declining tiger population, the illegal poaching of wild tigers for TCM is seen as the major threat (Damania et al., 2003; Ellis, 2005).¹³

2.2 Rhino horn

The poaching of rhinoceros has a similar story, driven by the demand for its highly valued horn used in TCM. Rhino horns, *Xī Jiǎo* (犀角), are pulverized and processed into medicine. Rhino horn is used to cool the blood, alleviate fever (especially children's high fever), erythema, purpura, nosebleeds, convulsion and cramp, as well as heart disease (Bensky and Gamble, 1993, pp. 66–68). Rhino horn is prescribed with an average

dose of 1–2 grams as a powder or is ground into a “juice” (Bensky and Gamble, 1993; Mainka and Mills, 1995).¹⁴ The demand for rhino horn has probably increased recently following the spread of unsubstantiated claims that a Vietnamese official was cured of cancer through the use of rhino horn (Ayling, 2013; UNODC, 2013). As a result of these claims, more stories circulated and cancer sufferers traveled abroad for illegal treatment with rhino horn, alongside chemotherapy and radiotherapy (Sellar, 2014). While at the beginning of the 20th century, the wild rhinoceros population was around 500,000 in Asia and Africa, the population had declined to 70,000 animals in 1970, and the current population is estimated to be around 29,000 animals, a decline which has mainly been caused by poaching. The current level of poaching is illustrated by the increase in the number of rhinoceros poached in South Africa from 13 in 2007 to 1,215 in 2014 (Milliken, 2014).

2.3 Saiga antelope horn

As a consequence of the Chinese ban on rhino horn in 1993, additional pressure has been placed on the population of saiga antelopes (*Saiga tatarica*), as their horns are used as an alternative to rhino horn in TCM to alleviate fever (Ellis, 2005). Saiga antelope horns, *Líng Yáng Jiǎo* (羚羊角), are soaked, dried, and ground into a powder and used in TCM to calm the liver, as a detoxification, to assuage epilepsy, and (similar to rhino horn) to alleviate (infant) fevers by sedation (Bensky and Gamble, 1993, pp. 422–423; Zang, 1990). The dosage is 0.9–3 grams in powders or pills (Bensky and Gamble, 1993). At one time, the population of saiga antelopes spread all over the Eurasian steppe from the Carpathian Mountains and the Caucasus to Dzungaria and Mongolia. Primarily due to the demand for its horn in TCM, the total population has decreased by over 95% in the last 15 years (CITES, 2007; Kühl et al., 2009). In certain saiga populations, the sex ratio has become skewed, with adult males forming only 5.7% of the herd population, as the poaching is limited to (young) males with horns (Von Meibom et al., 2007). Currently the population of saiga antelopes is estimated to be around 56,300–61,300, compared with 1,250,000 in the mid-1970s (Von Meibom et al., 2010).

2.4 Pangolin scales

Similar to products from tigers, rhinos, and saiga antelopes, parts of pangolins (*Manis ssp.*) are extensively used in TCM. The scales of pangolins, *Chuān Shān Jiǎ* (穿山甲), are generally pulverized into powder and used in TCM to promote blood circulation, stimulate milk secretion, and reduce skin infections or swelling (Bensky and Gamble, 1993, p. 291; Ellis, 2005). Powdered pangolin scales are currently also prescribed to prevent or

to cure breast cancer (Van Uhm, 2016a). The dosage is 3–9 grams and the powder is the most effective form (Bensky and Gamble, 1993). The trade in pangolins has a long history, with the export of thousands of pangolin scales from Java to China to supply the domestic market dating back to 1925, and China is still the major demand market (Pantel and Chin, 2009; Shepherd, 2009; Wu et al., 2004). The global pangolin population is estimated to have been reduced by up to 30% over a 27-year period, and the main threat to pangolin survival appears to be poaching for TCM (Ellis, 2005; Challender, 2011). Currently, pangolins are the most commonly seized wildlife throughout Southeast Asia (Shepherd, 2009).

Illegal wildlife trade along the Silk Road

One of the earliest wildlife trade lines along the Silk Road included trade from Chinese merchants who had settled in the Mekong Delta and coastal areas of present-day Cambodia and Vietnam in the 6th century ce (Nooren and Claridge, 2001, p. 17). Since then, the Chinese migrated to neighboring Southeast Asian countries, as well as Africa, Europe, and Australia to establish businesses. These traders were often driven by wars, starvation, or political corruption to leave China. Bovenkerk and associates (2003) noted that not only legitimate but also criminal organizations follow such routes of migration, as cultural and economic globalization is assumed to have promoted the spread of ethnic criminal networks (Bovenkerk et al., 2003).¹⁵ The more open-market economy in late 20th century – China, in combination with decentralization and privatization – created additional opportunities for illegal entrepreneurs.

The close Asian connections

The connection with nearby countries along the Silk Road has always been important in the context of wildlife trafficking for China. For centuries, the Chinese migrated to (bordering) Asian countries along the Silk Road (e.g., Vietnam and Laos) to settle and to search for employment (see Figure 7.1); some became workers for established Chinese businesses, whereas others became involved in the trade in wildlife (Nooren and Claridge, 2001; Yongge, 2000). This is illustrated by Vietnamese kings who paid tributes to Chinese rulers in 200 BCE, including rhinoceros horn, or the Ho (from Yunnan, China) who exchanged salt, metals, and other goods with wildlife ingredients for TCM with the inhabitants of Laos, who had migrated to northern Laos in large numbers and used their family connections to collect animal products to ship to Chinese markets (Nooren and Claridge, 2001). Many Chinese corporations were also developed by Chinese families all over the Southeast Asia region to provide raw materials for TCM (e.g., tiger bone, pangolin scales) (McNeely and Wachtel, 1991).

Since poaching in China had resulted in a significant decline in specific endangered species used in TCM, the neighboring countries were being

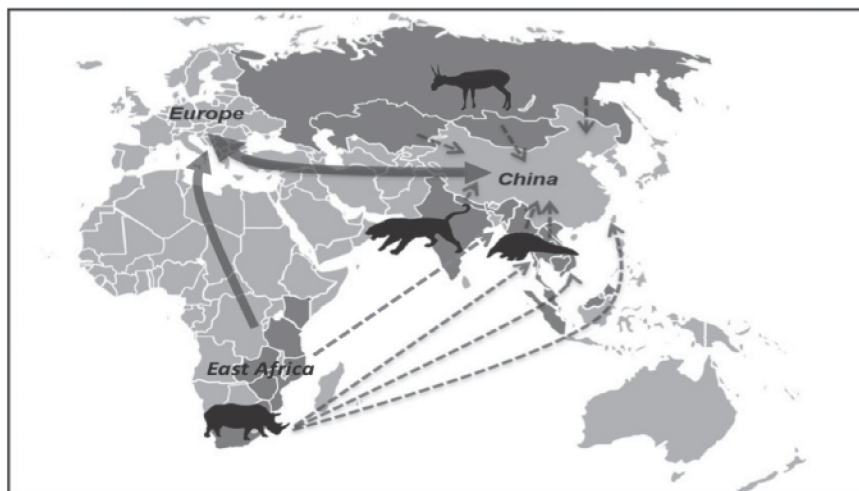


Figure 7.1 Illegal wildlife routes along the Silk Road

Source: Personal analyses of seizure and interview data

particularly targeted for those animal products (e.g., Ling, 2008; Pantel and Chin, 2009; Yongge, 2000). Clear examples of illegal wildlife traders from neighboring countries include Chinese middlemen in Myanmar (Burma), Vietnam, Laos, and Indonesia who recruit poachers from indigenous communities to hunt pangolins, or Chinese entrepreneurs in Russia, Kazakhstan, and Mongolia who supply the horns from saiga antelopes (Van Uhm and Wong, 2019). The sourcing of high-value wildlife products such as Asian rhino horns and tiger bones is arranged by Chinese middlemen in India (Milliken, 2014; Wong, 2015).¹⁶ In those wildlife source areas, Chinese middlemen usually come from larger cities near the hunting area; they pass by the small villages to collect the raw materials or, the other way around, poachers bring the products to them. These Chinese middlemen own small shops such as bakeries, grocery shops, and home decoration outlets to cover their illegal wildlife business (Van Uhm, 2016a). This interdependence makes it advantageous to intertwine legal and illegal products (Zhang et al., 2008).

The terrestrial European connections

The terrestrial Silk Road between China and Europe is also being used by criminal organizations in the European Union (EU) that are closely involved in the illegal trade in raw materials of TCM (see Figure 7.1). Already in the 1990s, the British police dismantled a Chinese triad group in England that sold medicinal substances derived from endangered animals to customers in Asia

(Berry et al., 2003). The EU is also a source for rhino horn and tiger bone, as is illustrated by more than a hundred rhino horns being stolen from museums in the EU between 2011 and 2012 and tiger bone products from farmed European tigers being smuggled to Asia. Criminal groups travel throughout Europe in search of endangered species to supply the Asian market (Ayling, 2013; Van Uhm, 2016a).¹⁷ Besides being a supply market, the EU is also a transit hub between Africa and Asia along the Silk Road; pangolin scales and rhino horns are frequently transferred from Africa through the EU into Southeast Asia (Challender and Hywood, 2012; Milliken, 2014).

While there is a large demand market in China for illegal TCM, from the late 1990s onward, large amounts of illegal TCM also arrived in Europe (Sellar, 2014). Chinese criminal organizations, mainly based in Hong Kong, currently specialize in trading TCM containing derivatives of endangered species to several companies in the EU (Europol, 2011). The illegal trade from China along the Silk Road is confirmed by shipments of TCM containing products from endangered species that were confiscated in Europe. Between 2001 and 2010, more than 50,000 medicines containing parts of endangered animal species were intercepted in hundreds of seizures in the EU, primarily seahorses ($N = 30,458$); products from big cats, mostly tigers and leopards ($N = 7,198$); musk from musk deer ($N = 4,575$); bear bile ($N = 3,101$); saiga antelope horns ($N = 1,869$); rhinoceros horns ($N = 1,003$) and pangolin scales ($N = 121$). The majority ($> 65\%$) of the European seizures of medicines containing animal products originate from China (Van Uhm, 2014, 2016a).

The maritime East African connections

Historically, rhino horn for TCM originated from Asian countries, but this slowly changed when Asian rhinos drew close to extinction during the 20th and 21st centuries (Milliken and Shaw, 2012). Consequently, the illegal trade in rhino horn has largely moved to African countries in the past decades (Milliken, 2014; Milliken and Shaw, 2012). In East African countries along the maritime Silk Road, traditional poaching by local communities appears to have been transformed into the opportunistic poaching of endangered species for Chinese entrepreneurs (see Figure 7.1). For instance, locals in Tanzania and Mozambique poach rhinos to fuel the TCM demand market in Asia (e.g., Milliken, 2014).¹⁸ The level of organization during professional poaching trips is demonstrated by the use of heavy-caliber rifles, dart guns, infrared sensors, helicopters, and tranquilizing drugs that are well beyond both the economic and technological reach of most African local people (Ayling, 2013; Eloff and Lemieux, 2014; Montesh, 2013).

Rhino horns are regularly smuggled out of the area hidden in carpets or furniture. Chinese middlemen in big East African cities such as Maputo and Mombasa arrange that bulk consignments with dozens of rhino horns are hidden in containers and smuggled by ship. On other occasions, individuals are recruited to smuggle one or two rhino horns, regularly wrapped in newspapers

and sealed with tape, in secret compartments in suitcases and bags by aircraft from East African countries (Milliken and Shaw, 2012; Van Uhm, 2016a).¹⁹ The horns are often smuggled from East Africa through Hong Kong into Guangzhou in mainland China. That products from Hong Kong are seen as possessing higher quality and originality would be the reason why many Chinese come to Hong Kong to buy genuine TCM products. It even happens that rhino horns are smuggled from mainland China to Hong Kong to be sold for a higher price to the Chinese who then smuggle the horns back into mainland China (Van Uhm, 2016a).

The role of ethnicity, family, and cultural ties

The connections with ethnic Chinese in source countries of products for TCM reflect the important role of social ties in organizing illegal wildlife trade (Van Uhm and Wong, 2019). Seizures in China confirmed that 93% of the wildlife smuggling rings were ethnic Chinese (UNODC, 2013), but also other authors mentioned the involvement of ethnic Chinese middlemen in the illegal trade in TCM in source or destination countries (e.g., Ling, 2008; Milliken and Shaw, 2012; Nooren and Claridge, 2001; Pantel and Chin, 2009; Yongge, 2000). Pantel and Chin (2009) highlighted that middlemen in the pangolin trade are mainly ethnic Chinese; a study in Malaysia into the illegal trade in pangolins confirmed that seven out of eight traders are Malaysian Chinese. Ling (2008) found many ethnic Chinese in Mong La (Myanmar), 1,500 meters from the China–Myanmar border, trading in products from endangered species for TCM such as pangolin scales, bear bile, and tiger bones. Another study on rhino poaching referred to Chinese middlemen being involved in the illegal rhino horn trade in South Africa (Milliken, 2014; Milliken and Shaw, 2012).²⁰ In this way, ethnic ties can act as a mechanism to foster cooperation between members of the same ethnic group (Misztal, 1996). This illustrates that criminal networks have a habit of interacting within their own ethnic, national, or language groups to facilitate illegal business, instead of performing in a social vacuum (Van de Bunt et al., 2014).

Business partners regularly belong to the same Chinese ethnic group from the same region, while social ties with family and friends would guarantee the secure network (Zhang and Chin, 2008; Van Uhm and Wong, 2019). These networks would rely upon family or ethnic community links to increase trust and reliability and to reduce the possibility of infiltration (Moyle, 2009).²¹ For instance, in 1991, the Ho Chinese, involved for centuries in the wildlife trade, migrated to northern Laos in large numbers; they still use their family connections to collect animal products to ship to Chinese markets (Nooren and Claridge, 2001). Another example includes Daluo, a small border town in Southern China, where ethnic relatives live on both the Chinese and the Myanmar side of the border. The local communities use their social ties to smuggle illegal wildlife across the border (Van Uhm, 2016a). Ethnic Chinese run similar illegal

wildlife businesses in several cities in Asia, such as Mong La and Tachileik in Myanmar, the “special economic zone” (SEZ) in northern Laos (see Figure 7.2) and Mae Sai in Thailand.

Thus, the establishment of TCM networks seems to be commonly based on ethnic, family, or cultural relationships with Chinese middlemen in China and abroad to foster relationships of trust (Van Uhm and Wong, 2019). The importance of social ties is also illustrated with the use of the social practice of *guanxi* in the symbiotic relationship of Chinese middlemen with officials. *Guanxi* is the basic dynamic in Chinese personal networks of influence and



Figure 7.2 Rhino horn for sale in the SEZ

Source: Personal observation, Laos, 2017

refers to favors gained from social connections (Myers, 1995; Yeung and Tung, 1996; Zhang et al., 2009). The process of bribing officials starts with the *guanxi* practice of gift giving: When an official accepts a gift, there is a strong possibility that the official is willing to repay the debt and the bribe process can be developed (Van Uhm and Moreto, 2018). For example, some soldiers at the Guangxi border let wildlife traffickers pass their contraband, TCM doctors sometimes pay government officials (gifts or money) to ensure that their clinics will not be inspected, while legitimate TCM companies buy illegally confiscated rhino horns that were smuggled across the Myanmar–China border by Chinese police (Van Uhm, 2016a).

The Chinese under and underworld of wildlife

The interrelationship between social ties in the underworld and the upperworld illustrates the dual nature of the illegal wildlife business. Criminal wildlife smuggling networks regularly operate within the social context of legally registered companies, showing how these groups do not operate outside the legal world, but use their legal structures to hide and facilitate their illegal businesses (Van Uhm and Moreto, 2018). For instance, to buy illegal TCM products from neighboring countries, shopkeepers register these products under another name; pangolin scales and saiga horns are “officially” purchased as herbs to avoid registration control. This may occur in small hospitals and clinics as well. Once purchased, the hospitals and clinics state that these products are from existing stockpiles (Van Uhm, 2016a), although the stockpiles of saiga horn and pangolin scales have been calculated to have long since been used. In 1994, the total supply of saiga horn in China was estimated at 155,500 kilograms, and in a second nationwide survey undertaken by the government in 2005, the total volume was 55,000 kilograms (Von Meibom et al., 2010). This means that with a decrease of more than 100,000 kilograms in about ten years, the total amount of the stockpiles will be minus 45,000 in 2015. This indicates that the deficiency is solved in an alternative way, and illegally obtained products are mixed with legal products.

Another method that legitimate companies use is to claim that their saiga horns and pangolin scales are from farmed animals in China, which would make them legitimate (Van Uhm, 2016c). The necessary knowledge to breed these animals commercially is, however, deficient (Braun, 2009; Li et al., 2007; Yang et al., 2007). Both animal species, pangolins and saiga antelopes, are extremely difficult to breed in captivity (Li et al., 2007; Shepherd, 2009). Since 1987, for instance, efforts have been made to increase the captive-bred population of saiga antelopes in order to reintroduce them into the wild in China. Only 114 saiga antelopes have been bred after all that time (Zhao et al., 2013). This population is too small for the commercial market, and it is therefore strictly prohibited to use their horns commercially. In reality,

some legitimate companies actually buy their saiga horns and pangolin scales on the black market; these illegal products are from wild animals (Van Uhm, 2016a).

Besides claiming that the products are from existing stockpiles or from captive-bred animals, a third “laundering” method is being used by legitimate companies. While in China the population of wild tigers decreased from 4,000 in 1949 to 40–50 in 2012, the tigers in China’s farms increased from eight to 13 in 1986 to 6,000 in 2010 (EIA, 2013). In the 1980s, tiger farms were developed to breed tigers for the commercial supply of bones for TCM. For instance, in the early 1990s, Guilin Xiongsen Bear and Tiger Mountain Village, with 400 captive-bred tigers at that time, regularly supplied bones to the TCM industry, and a factory in Harbin manufactured half a million tiger bone plasters each day with a bone-crushing machine (Nowell, 2000). While the sale of products derived from captive-bred tigers has not been allowed since the ban in 1993, there are strong indications that local officials still accept the trade in tiger bone products (EIA, 2013; Nowell, 2009; Nowell and Ling, 2007).²² For example, many bottles of tiger bone wine are for sale at Harbin Tiger Farm in Harbin, China (see Figure 7.3). Staff members confirm that tiger bones are used to make tiger bone wine (Van Uhm, 2016a). It is believed that products from captive breeding tigers are illegally traded along the Silk Road (Nowell, 2009), as for instance, in the seizure of several tiger carcasses near the border with Malaysia where a range state showed, after DNA analysis, that they were the carcasses of Siberian tigers, a species bred on a large scale in farms in China (Sellar, 2014).²³



Figure 7.3 Tiger bone wine for sale in Tiger Farm Harbin

Source: Personal observation, Harbin, China, 2013

The diversification of organized crime

The rising global scarcity of endangered species along the Silk Road increasingly attracts transnational criminal organizations that rapidly shift from “traditional” criminal activities to the illegal trade in wildlife (Elliott, 2009; UNEP, 2016).²⁴ The diversification of organized crime syndicates into the lucrative business of trafficking endangered species alongside their traditional activities (Interpol, 2016; UNODC, 2012) can be shown by the Irish crime group the Rathkeale Rovers, which stole dozens of rhino horns from museums in Europe to be traded to China (or Vietnam) (Europol, 2012; Milliken and Shaw, 2012; Van Uhm, 2012). In addition to the theft of rhino horns, the Irish crime group was also involved in tarmac fraud, cigarettes, the distribution of counterfeit products, organized robbery, money laundering, and drug trafficking (Europol, 2012). It is estimated, for example, that one of the members has evaded £9 million in excise duty by smuggling 67.6 million fake cigarettes into Britain, while others were involved in drug-running operations in London (Peachey, 2016). There are many similar examples in which wildlife traffickers along the Silk Road are involved in other forms of crime.²⁵

The overlap with other forms of crime is well illustrated by the rich flora and fauna border region between Yunnan (Southern China) and Vietnam, Laos, and Myanmar (Li and Wang, 1999), which is traditionally well-known for its opium cultivation (Zhang and Chin, 2011). This region, notorious as the Golden Triangle, is said to be dominated by drug-smuggling organizations (Chin, 2009). For centuries, local people would cross the borders of Yunnan and Myanmar without many problems from the law enforcement authorities and farmers cultivate lands that straddle both countries. Successful stories of smugglers who became rich quickly spread the popularity of smuggling by the Hui minority in these regions (Zhang and Chin, 2011). Since the growing restrictions on the opium trade, there is now a shift to the illegal trade in wildlife, where locals smuggle tiger bones, rhino horns, bear bile, and pangolin scales across the border and drug lords invest and trade in tiger products.²⁶ Another example in the Golden Triangle involves criminal groups that dominate several illegal forms of crime, including the supply of illegal TCM products to the free economic Chinese zone in northern Laos.²⁷ In this area, rhino horns and tiger skins are sold without any intervention from law enforcement (EIA, 2013).

Long-distance transfers of high-value wildlife, such as rhino horns from Africa or Europe, especially require the involvement of a wide range of brokers, middlemen, and shippers who are not necessarily wildlife traders, but are rather experts in the smuggling of illegal goods (such as drugs) (UNODC, 2013). Already in the 1980s, rhino horn smuggling was highly organized and in the hands of powerful organizations of a military nature, such as the South African Defence Force (Montesh, 2013; Van Vuuren, 2006). In addition, Chinese criminal groups in South Africa, with connections to the Chinese triads

14K and the Wo Shing Wo in Hong Kong, became active in the rhino horn trade – in addition to the shark fin and abalone trade (Gastrow, 2001). Recent studies confirm the ongoing involvement of Chinese organized crime in the illegal trade in rhino horns for TCM from East Africa to China. They are directly involved in organizing and financing the rhino horn trade and have connections with deeper trade channels in Asia. These rhino crime syndicates are typically multinational operations that include other criminal activities like the trade in drugs, arms, diamonds, humans, and other wildlife products such as elephant ivory and abalone (Gastrow, 2001; Hübschle, 2010; Milliken and Shaw, 2012; Montesh, 2013; Rademeyer, 2012).²⁸

Conclusion

The modern Silk Road is believed to start a new era of globalization by reopening channels between China and its neighbors in the west. This chapter discussed the current involvement of criminal wildlife networks involved in the trafficking of raw materials for TCM along the Silk Road in Asia, East Africa, and Europe. The organization of this illegal trade relies heavily upon ethnic, family, and cultural ties to increase trust and reliability and to reduce the possibility of infiltration. In addition, symbiotic relations between the wildlife underworld and upperworld provide exclusive opportunities for laundering and shadowing illegal trade. Global scarcity and increasing prices on the black market for endangered species ensure, furthermore, that transnational criminal organizations will diversify into the illegal wildlife business along the Silk Road. This illustrates that OBORization may not only have a harmful environmental impact but also may be susceptible to the expansion of cross-border organized crime in the near future.

Notes

- 1 The concepts of Qi, yin–yang, and Wu Xing are the most important in the ancient philosophy of TCM. Qi generally refers to metaphysical energy in terms of breath, vitality, vital energy, or spiritual energy. Yin–yang expresses opposite forces that are necessary for good health. Yin is associated with darkness, cold, wetness, passivity, and decrease, in contradiction to yang, which is associated with light, heat, movement, and increase. These forces occur in relation to each other and are used to stimulate conditions in TCM. Wu Xing is the relation between the five human organs and five elements of the world. Wood is associated with the liver, fire with the heart, earth with the spleen, metal with the lungs, and water with the kidneys. All phases are in relation with each other in an organic whole (Xu and Yang, 2009).
- 2 Today, traditional medicine is used alongside its modern equivalent, such as antibiotics, and from a holistic approach, much like Western homeopathy models (Xu and Yang, 2009).
- 3 TCM practitioners still deliver 40% of health care in China (Scheid, 2001).
- 4 CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is a multilateral treaty to protect endangered plants and animals (see for more information: Hutton and Dickson, 2000).

- 5 The List of Wildlife under Special State Protection as designated by the Chinese State Council pursuant is recorded in Article 9 of the Law of the People's Republic of China on the Protection of Wildlife.
- 6 Article 16 Law of the People's Republic of China on the Protection of Wildlife.
- 7 Article 22 Law of the People's Republic of China on the Protection of Wildlife.
- 8 Article 22 Law of the People's Republic of China on the Protection of Wildlife.
- 9 Article 11 Circular of the State Council on Banning the Trade of Rhinoceros Horn and Tiger Bone.
- 10 In 2008, CITES adopted Decision 14.69 that states that tigers should not be bred for the purpose of trading their parts and derivatives thereof (CITES, 2008).
- 11 Since the skeleton of an adult tiger weighs around 20 kilograms, this will supply only nine to 18 rheumatoid arthritis patients per year (Mainka and Mills, 1995).
- 12 During the 1930s, the Bali tiger (*Panthera tigris balica*) became extinct; during the 1970s, the Caspian tiger (*Panthera tigris virgata*) became extinct; and the Javan tiger (*Panthera tigris sondaica*) became extinct in the 1980s (Abbott and Kooten, 2011).
- 13 For instance, within a few years, poachers killed all the tigers in Sariska Reserve, a national park in India (Sankar et al., 2005).
- 14 It is believed that the horns of the Asian black rhinoceros (Yunjiou or Siam horn) are more powerful than the horns of the African rhinoceros (Guangjiao or Guangdong horn) (Ellis, 2005; Mainka and Mills, 1995; Nowell et al., 1992). The smaller size of Asian horns would indicate that they are more concentrated, and therefore more powerful and potent (Still, 2003).
- 15 For instance, Italian Mafia migrants dominated the underworld in New York based on family ties (Bovenkerk et al., 2003). Another well-known example is the emergence of the relatively cheap heroin trade from Hong Kong to Europe during the late 1970s and early 1980s (Strang et al., 1997). Chinese who had already migrated to cities, such as Amsterdam, in the early 20th century collaborated with the 14K, Wo Lee Kwan, and the Wo Sing Wo Chinese triads to supply heroin (Van Traa, 1996).
- 16 Ideal candidates to recruit as poachers come from indigenous communities with strong hunting cultures, such as the Indian Bawariya and Behliya tribes for hunting tigers (Moyle, 2009). The hunters may obtain loans from middlemen to cover their daily basic expenses (e.g., Pantel and Chin, 2009).
- 17 A rhino was even shot dead by poachers at a French zoo in 2017.
- 18 Sometimes inexperienced youths enter national parks to shoot a rhino in the prospect of making easy money (Hull, 2012).
- 19 Rhino horns are usually smuggled whole, because buyers prefer to purchase complete rhino horns to ensure their authenticity (Montesh, 2013; Walker and Walker, 2012).
- 20 Analyses of illegal TCM from China to the Netherlands show that these packages are regularly delivered by family members (Post, 2013).
- 21 The lack of "systemic trust" of national states that build upon the existence of laws and the public capability to enforce them (Luhmann, 1979, pp. 68–69) ensures that within the "illegal arena", trust predominantly has a personal basis (Gambetta, 1988; von Lampe and Johansen, 2004).
- 22 Moreover, it is probable that there are already rhino farms in China, given the use of their horns in TCM as a treatment for cancer (Cota-Larson, 2013).
- 23 While each year many tigers die on the farms and the employees of these farms claim that they use tiger bones in the tiger bone wine, on the ingredient list of the bottles the Latin name *Panthera leo* is mentioned. This would suggest that the bones are from lions instead of tigers. According to Nowell (2009), this may be a laundering method: The farms pretend that they are using lion bones (CITES II), but in reality they use the forbidden tiger bones (CITES I).
- 24 The value of animals and wildlife products typically increases by 25%–50% as they pass through consecutive links in the supply chain. This is particularly true in the case of

- rare medicinal and luxury items (tiger parts and rhino horn) (UNODC, 2013). Whereas pangolins are purchased for around €30–40 a kilogram from the hunter, the market price for consumers in China or Europe would be between 1,700 and 5,000 CNY (€197–580) per kilogram. According to Liddick (2011), from the sources in Myanmar to the final market in China, the price of pangolin increases forty- to fiftyfold. Saiga horns can be purchased for €130 for 1 kilogram from the hunters and the market price would be around 14,000–18,000 CNY (€1,622–2,086), thus easily tenfold the price. A kilogram of rhino horn on the black market in East Africa is sold for around €3,500–4,000 and is sold in China for around 130,000–200,000 CNY (€15,065–23,176), while tiger bones are bought in range states for around €500–800 and sold for around 20,000–30,000 CNY (€2,318–3,476) (Van Uhm, 2016a).
- 25 This has been confirmed in China by confiscations of saiga horns combined with cigarettes, rhino horns with arms, abalone, ivory, tiger bones with arms and pangolin scales with imitation product (Van Uhm, 2016a).
- 26 Personal interviews, Daluo and Mong La, June 2016.
- 27 Personal interviews, Tachileik, Mae Sai and the SEZ, June 2017.
- 28 The connection between the trade in rhino horn and abalone has been confirmed by previous research (e.g., Milliken and Shaw, 2012; Montesh, 2013), and it is suggested that 90% of abalone and rhino horn smugglers are associated with each other.

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