Social network analysis of gifting bear bile in Vietnam

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Abstract

The illegal wildlife trade is the major cause for global loss of diversity. In Southeast Asia regions and particularly in Vietnam, the consumption of wildlife products is mostly driven by the demand for food and traditional medicinal products. However, consumers' motivations are poorly understood. In this study, we use mixed social science approaches and social network analysis to understand the social network influence on the consumption of bear bile through gift-giving practices in Hanoi and Nghe An. The study also provides a deeper understanding of how bear bile is consumed as gifts and the current information on bear bile usage. We found that 97.5% of all interviewees have given or received bear bile and the most common occasion for gift-giving is during visits between closed social circles of family and friends. Other reasons for giving bear bile include illnesses, gratitude, drinking among males, and ulterior motives.

1. INTRODUCTION

Southeast Asia is both a main consumer and supplier of wildlife products to the world (Nijman 2010). Within Southeast Asia, Vietnam is a biodiversity hotspot and a cross-bridge point for trade, which makes it a focal country in illegal wildlife trade (Song 2008; TRAFFIC 2008; Nijman 2010). The illegal wildlife trade in Vietnam is mostly driven by demand for wildlife meat and traditional medicine products (Venkataraman 2007; Song 2008), which has extirpated the populations of many wildlife species including tigers (*P. tigris sp.*) (Goodrich et al. 2015), and rhinos (*Rhinocerotidae sp.*) (Brook et al. 2014), while pushing others closer to extinction, e.g., orchids (Bullough et al. 2021); pangolins (Challender 2011); and bears (Crudge et al. 2016). Both native bear species, the Asiatic black bear (*Ursus thibetanus*) and the Malayan sun bear (*Helarctos malayanus*) are designated as “Vulnerable” in IUCN Red List and “Endangered” in the Vietnam Red Data Book (IUCN 2017; IUCN 2020). By far the greatest threat to bears in Vietnam is the use of bear bile in the country (Crudge et al. 2018; Davis et al. 2019). As most bears in farms are captured from the wild or from neighboring countries (Crudge et al. 2018), the commercial market provided by the bear farming industry, and demand for bear bile drives the decline in bear population in Vietnam (Nguyen 2006; Drury 2011; Crudge et al. 2016; Wilcox et al. 2017). Despite regulations and efforts to end the extraction of bile in bear farms by the Vietnamese government, the bear farm industry is still active (Crudge et al. 2018) and bears are still demanded at unsustainable rates (Davis et al. 2019, 2021).

Although law enforcement can be crucial for conservation e.g., by shaping social norms (Bell Rizzolo 2020), it has been ineffective as a long-term solution to abate the decline in illegal wildlife trade especially for high-value species such as pangolins (Venkataraman 2007; Challender and MacMillian 2014). Therefore, conservationists are focusing on studying human behaviors and implementing demand reduction campaigns to reduce the illegal wildlife trade (St John et al. 2010; Milken and Shaw 2012; Veríssimo 2013). However, the most common challenge encountered by behavioral change interventions is the lack of in-depth research into specific consumer behavior, which prevents organizations from locating the main targeted audience groups and understanding their motivations (St John et al. 2010; Olmedo et al. 2018; Veríssimo 2019). Subjective norms greatly influence whether the individual will carry out a behavior, and this often forms through interactions within social networks (St John et al. 2010). In order to understand what drives the consumption of illegal wildlife products, it is important to study the influence of the consumers’ social networks, specifically how information flows within such a structure, and which actors influence the collective social norms and by extension actions of the other actors (e.g., de Lange et al. 2019).

In Hanoi, bear bile has mostly been consumed for its medical value (Drury 2009; Davis et al. 2019), but it has also been noted to be given as gifts, which indicates that the social network may act as an influence on the current demand for bear bile, especially through word-of-mouth and gift-giving (Davis et al. 2019). Gift-giving is a fundamental social behavior

that forms and crystalizes relationships (Gouldner 1965; Sahlins 1965), and the exchange of gifts can effectively facilitate information transmission within social networks. In China, which shares significant Confucian-based societal similarities with Vietnam (e.g., Huang and Chang 2017), this act of gift-giving to maintain relationships between family members and business partners is referred to as the practices of *guanxi* - interpersonal relationship maintained by continuous reciprocity (Davies 1995; Steidlmeier 1999). The exchange of gifts goes along with the exchange of favors, the giving of respect or social status and the saving of “face”, *lien* - one’s respectability gained from others within social groups (Ho 1976; Davies 1995). The outcomes of gift exchange are similar to what one can gain through social capital – a concept generally referring to the investment in social interactions with expected returns (Lin 1999). Social capital allows the individual or group to access useful social resources through specific ties in the social networks to gain benefits such as promotion, better jobs, and information (Lin 2000). It is likely that gift-giving, as a fundamental form of social interactions, can establish and maintain social capital (Dolfsma et al. 2009); i.e., through conferring benefits that create social obligations for the recipients to return a favor (Befu 1968). Due to these social benefits, the gifts are often valuable products, which explains the use of tiger bones, elephant tusks, and rhino horns in Vietnam as gifts to strengthen relationships between business partners or within the family members (Milliken and Shaw 2012; Thomas Walters 2017; Dang and Nielsen 2021). It is likely that gift-giving of wildlife products can significantly influence the attitudes of individuals towards the product and drive the demand for wildlife trade; however, “gifting” as a driver of wildlife consumption has not been explored through anthropological methods, to date. This is the first study to understand the complex social influence of gift-giving on the consumption of an illegal wildlife product-bear bile- using social network analysis. We use the gift-giving practice of bear bile in Hanoi (northern Vietnam) and Nghe An province (central Vietnam), as a case study. By exploring the exchange of bear bile between varying urban contexts, we can also unpick specific environmental factors that may affect this practice (e.g., less information flow in a less urbanized province (e.g., Avenarius and Zhao 2012).

This study serves both to illustrate the importance of understanding complex, cultural acts when attempting to address problems of conservation concern, while also illuminating practical opportunities for influencing Vietnamese bear bile consumers to shift from gifting and receiving bear bile.

2. METHODOLOGY

a. Interview guide design

We used a semi-structured interview guide to elicit deeper information about respondents’ motivations and behaviors, informed by past qualitative efforts exploring use of bear bile in the region (Davis et al. 2020, 2021). The guide was structured to begin with demographics questions such as age, education, ethnicity. The next section was intended to understand

respondents' perceptions about the benefits of bear bile, followed by questions designed to understand the relationship between donors and recipients of bear bile and the context of the gift, e.g., "what is the occasion for the gift of bear bile?", "is the recipient/donor your relative?". Following this section, respondents were asked general questions about use of bear bile in their social network, with the interview ending with questions about their use of other bear products. The full interview guide can be found in the **Appendix**.

b. Sampling Protocol

Snowball sampling technique was used to locate donors and recipients of bear bile within a known consumer's social network. Snowball technique is effective in identifying a small group of respondents by using a key informant to reach out to others in the network (Bernard 2006), and can overcome potential privacy concerns respondents may have (Dang and Nielsen 2021). We interviewed the key informant and asked the individual to recommend a person who they had given bear bile to and/ or if not, had received bear bile from. We then reached out to the suggested individual, and repeated the process of asking them to make their recommendation of a user and/ or donor of bear bile. Consequently, a network of connected users grew from the first key informant. This network of gift-giving patterns included the network of kinships, friends, and work relationships. Thus, the survey site largely depended on the respondents' recommendations. The network was considered completed when no new names were offered by any key informant (Bernard 2006).

c. Study areas

The key informant currently resides in Hanoi, the capital city of Vietnam and is originally from Dien Chau commune in Nghe An Province. Recommended respondents and interviewees resided in these two sites and Vinh City (**see fig. 1**).

d. Interview protocol

Informants were interviewed at their homes, or at a place of their choosing. Interviews lasted approximately 30 - 60 minutes. Informants were notified from the beginning of the interview that their responses were anonymous, that their interview only would be audio recorded, that only the study lead (who was also the interviewer) would have access to the data, and that they could withdraw at any time. Ethical approval was granted by Miami University of Ohio's Internal Review Board (#02106e).

The study lead and lead author, who is fluent in both Vietnamese and English, conducted the interviews, writing notes throughout, and audio-recording the interview. Following the interview, the lead author listened to the audio, transcribed, and recorded additional points that may have been missed in initial note taking. After transcribing, the lead author translated the interviews into English.

Figure 1. Study sites within Vietnam highlighted: Hanoi city, Dien Chau commune and Vinh city.

e. Analysis

In this study, we conducted standard, systematic qualitative analysis through coding the collected interviews, identifying themes, and grouping the themes into testable theories (Bernard et al. 2016). As little prior literature existed about gift-giving of wildlife, as well as

about Vietnamese social networks, we consulted anthropological texts on general gift-giving practices and social networks in pan-Asian cultures. In addition, social network analysis was used as an analysis tool to understand the pattern of information flow and to identify influential positions in the network (Borgatti et al. 2013). Key actors have great social influence on others and play an important role in facilitating information transmission such as the efficacy of bear bile. As the network expanded from the key informant, we measured the ties between actors through the exchange of gifts and those who were most connected would be identified as the influential actors. UCINET software was used for visualization (Borgatti et al. 2013). Two social network maps were created using the data collected, with one map demonstrating gift flow (**see fig.2**), and the other of family ties (**see fig.3**).

3. RESULTS

Demographics of interviewees within the social network

A total of 40 qualitative interviews were carried out with 23 participants in Hanoi and 17 in Nghe An. Among 40 respondents, only one answered she had never been given or received bear bile. We reported the demographics for the qualitative interviews in the table below (**Appendix, Table 1**). Of the 40 interviewees, 11 were female and 29 were male. The majority of the interviewees (n= 18) were in the age range of 45-99 and none were below the age of 30.

Summary of bear bile usage and gift-giving practices within the social network

Box 1 &2 :

Sharing bear bile within closed social circles

Interviewer: Who often give you bear bile??

Interviewee #32: My friends mostly. They work in the mountains and forests for a long time and once in a while, the tribes there sold them a little. When they came home, they shared some with me. There are both wild and farmed bear bile, sometimes even the whole bile. If the travel distance is long, they often soak it in rượu first.

Male age 50 resides in the countryside of Nghe An.

Female age 50 resides in the countryside of Nghe An

Box 2

Interviewer: Have you ever given bear bile?

Interviewee #33: I gave plenty of times. My close friends often bought and shared bear bile together between one another. The best occasion to give bear bile is when family members are injured and bruised; after applying bear bile on the bruises, all the bruises would disappear by tomorrow morning. So I often kept bear bile as storage in my house. The farmed bear one is not effective, but the wild bear is kept as a precious thing in the household like rhino horns. Because bear bile is so effective, many people still use farmed ones, even as gifts. But wild bear bile is still more effective.

Male age 70 resides in Vinh city, Nghe An

For both donors and recipients, there were five mentioned reasons to give or receive bear bile: 1) “no special occasions”, i.e., when donors have surplus bear bile (n= 19); 2) a gift of gratitude (n=7); 3) a gift for injured friends and relatives (n=16); 4) a gift for drinking (n=7); and 5) a gift for other motives (n=1).

Gift-giving practices in closed social circles (see box 1 and 2) were more common than outside the circle. In addition, all donors and recipients considered wild bear bile more valuable as gifts in all occasions. The frequency of giving bear bile was in decline, although giving and receiving bear bile peaked approximately three years ago. A lesser peak was observed approximately ten years ago, following a rapid increase in the giving, and receiving of bear bile between ~2004 to ~2011, which corresponds with bear farming’s peak in Vietnam (Crudge et al. 2018). Within the year prior to the interviews (mid-2019 to early 2020) 4 individuals (10%) gave bear bile, while 9 individuals (22.5%) had received bear bile. Giving bear bile was less common than receiving, with 17 individuals (42.5%) never having given bear bile. The reasons respondents mentioned for this decline included the legal ban on bear extraction and the perceived decreasing number of bear farms across the country. Concern for the authenticity of bear bile was also among the reasons given for the decline. In the countryside of Nghe An, the exchange of gifts was more recent than in Hanoi.

Figure 2. Gift-giving network with family ties (n= 16). The line indicates familial relations between interviewees who are also in the gift-giving social network.

Figure 3. Reciprocity map of bear bile gift-giving patterns between family members, friends and co-workers (n= 23). Blue lines indicate reciprocal giving, while red lines indicate “one way” (only give or take) gifting.

Occasions of Giving Bear Bile

Sahlins in his 1972 research “On the sociology of primitive exchange” noted that the span of social distance governs the mode of gift exchange, since the forms of reciprocation differ among close, distant, and non-kin. Similarly, the practices of *jia-ren guanxi* – *guanxi* within close social circles in China (Su and Littlefield 2001) - were built upon the continued exchange of favors (Pye 1992) where obligations decrease in proportion to blood distance (Su and Littlefield 2001). Gift-giving also governs and reinforces the social ties through the repeated act of exchange (Sahlins 1972; Gouldner 1965; Yan 1996), which accumulates the individual’s social capital. According to Lin (1999), these embedded resources within the social network are beneficial to the individual because of the strategic and/ or hierarchical positions of the social ties that can provide individuals with useful information, influence, and other favors.

To understand the social benefits that the actors gain through gift-giving and their expanded network, we looked into the occasions of the gifts to understand the intentions and the obligations of the donors. Based on the answers of the respondents and past literature, we decided to divide gift-giving intentions and obligations based on two relationship types between those within the close social circle – intimate family members, friends, and neighbors- and those outside it. The exchange of bear bile as gifts was more common between close family members (fig.2. & fig.3) and friends and less frequent outside the inner social circles.

The network was largely a “closed” network of kin (fig.3), bar a smaller, closed network of three individuals who were related to the main “closed” group through close friendship ties. Regarding the physical “gifting” of bear bile, most of the exchanges were non-reciprocal with bear bile only being received or given (fig. 3).

Gift-giving intentions and obligations within close social circles

According to Sahlins (1972), there are three types of reciprocity: the generalized, the balanced, and negative forms. The generalized form refers to the unspecified obligation to reciprocate with implicit expectations for the number of gifts and the time of return, which often occurs between close kinship (Sahlins 1972). Nearly half of the interviewees (n =16) said that they didn’t give or receive bear bile to close family members and friends on any special occasions, but rather on random visits when donors shared the bear bile they had (see box 3 as example). Male interviewees also mentioned that they often brought bear bile to drink with close male friends and family members during gatherings (see box 4 as example) as drinking is generally considered the provenance of men in Vietnam (Craig 2002; Kim et al.

2008), and is a social tactic to maintain harmonious relationships between male members (Vu 2013). For generalized reciprocity, people often used terms such as “sharing”, “hospitality” and “kinship” to describe the act of gift-giving (Sahlins 1972). This was evident during the interviews as the respondents preferred the term ‘sharing’ over ‘giving’ as the latter implies the social obligation to return, with products or services while the former underlies the intimate bonds between the donors and recipients. All giftings between family members were non-reciprocal with no returns of bear bile for the donors (fig.2), which also indicates the ‘sharing’ patterns with unspecified obligations to return. For example, respondent 33 gave bear bile to respondent 1, but respondent 1 did not give them bear bile. Instead, respondent 1 gave bear bile to respondent 20, who in turn gave bear bile to respondent 2. As seen in the kin network (fig. 2), respondent 20 and 2 are relatively removed from respondent 1 in kinship, yet still clearly part of the closed network of bear bile gifting.

This doesn’t mean that the donors in the closed social circles receive no or fewer social advantages. Whether the ulterior motives exist or not, the actors could still access the embedded resources within the social network and benefit from useful information or social influence due the social ties they had with a close friend or family member to. Family itself was considered social capital as it was a network of valuable social support (Prandini 2014). Respondent 1 has the most ties and receives the most bear bile, as seen in the gift-giving map in figure 3. Although respondent 1 was our key informant whose connections helped with the snowball sampling, it may also be explained by respondent 1 being a highly respected and influential member within his social network because of his broad connections.

Giving bear bile to the injured was common between intimate circles of friends and family. Illness signifies a time for moral support and concern, which can manifest through gifts (Befu 1968). This explains the prevalence of bear bile during visits to the injured as bear bile was perceived as an effective treatment for both physical ailment as well as for the overall wellbeing. Common incidents like bruises, indigestion, and motorbike accidents along with less common ailments such as liver malfunction were the mentioned occasions in which bear bile is given. Moreover, interviewees mentioned that they only notified the intimate circle of friends and families of ailments and accidents, which indicates that this form of gift-giving mostly occurred within the innermost social circle.

The only exception where this type of gift-giving occurred outside the family and friend groups was between neighbors in rural areas. For respondents in one study site in the countryside of Nghe An, they used the term “sharing” to describe the exchange of bear bile with both neighbors in their commune and the intimate members of close social circles. The expectations for reciprocation or obligations tied to the gift were also implicit. These transactions within the close social circles, or close neighbors in rural areas, consider the well-being of the recipients as an end in itself and often suggest few ulterior motives or personal interests. Therefore, the expectations for reciprocity were implicit and were not stipulated by time, quantity, or quality, which created no direct obligations (Sahlins 1972).

Box 3

Gift-giving within close social circles

Interviewer: What was the occasion for the gift?

Interviewee #31: There was no special occasions. My close friends just dropped by for a visit and since they had bear bile, they gave it to me. They also gave me bear bile when I fell.

Female age 50 resides in the countryside of Nghe An

Box 4

Drinking bear bile with friends was common for men

Interviewer: Who do you often give bear bile to?

Interviewee #33: Mostly my family. For my really closed friends, I often gave them a little bit of wild bear bile to soak in rượu and drink together. I haven't given bear bile interviewee 1 because they rarely drink rượu. I usually give it to [] person who drink the most rượu bear bile among all my friends.

Male age 70 resides in Vinh city, Nghe An.

Gift-giving intentions and obligations outside the inner social circles

Outside the close social circles, exchanging bear bile was a way to show gratitude and may imply ulterior motives, which required a special favor done in return. Giving bear bile can be considered a way to say thank you for a favor done and a means to express respect for the recipients (Befu 1968; Steidlmeier 1999). For example, an interviewee said his wife received bear bile from a customer after the business had ended successfully and the bear bile was considered a gift of gratitude. One interviewee who was a doctor mentioned that in the past, patients gave him bear bile after the treatment and two interviewees whose partners work in the service industry said that customers gave their partners bear bile as a way to say thank you for helping to operate the business (see box 5 as an example).

The exchange within work relationships may sometimes imply more than a gift of gratitude or concern. In the concept of social capital, the embedded resources within a social network through frequent investment in relationships can enhance the outcomes of the actions that benefit the individual. Firstly, these social ties due to their specific locations within the network facilitate the flow of useful information about opportunities otherwise

not available (Davies 1995; Lin 1999). This benefit has been studied in gift-giving and *guanxi* networks (Mauss 1966; Davies 1995; Sahlin 1972) in which useful information such as market trends, business opportunities, government policies and other important resources can be accessed through social networks. Moreover, the social ties with great social power can exert influence on decision-making individuals by “putting in a word” that will in turn benefit the actor and the acknowledged relationship can increase an individual’s social credentials. By investing in these relationships, the individual can get a better job, a promotion, and many other advantages (Lin 1999). Therefore, building interpersonal relationships in a business setting in China and Vietnam through the act of gift-giving or *guanxi* was extremely important as it can bring forth a lot of opportunities and resources (Davies 1995). This can be seen in the example of an interviewee who mentioned she received 1cc (cm³) bottle of bear bile every year during *Tet*- Vietnamese Lunar New Year holiday- from her employee who owns a bear farm. This continuous exchange of gifts during the holiday season sustains a long-term relationship and ensures social advantages for the donors.

However, there was a blurred line between gift-giving and bribery in the ethics of business (Steidlmeier 1999). The act of gift-giving is a natural dynamic in any relationships especially within a business setting where the act represents respect and trust (Davies 1995; Steidlmeier 1999). Bribery behind the alleged gift-giving happens when the donors create obligations through the gift and the recipients have to return the favor that they wouldn't do in normal circumstances (Befu 1968). The differences can be seen in the occasions to give and the value of the gifts. Gift-giving to build interpersonal relationships occurred continuously in forms of informal meetings, often over a meal or a time of celebration e.g., *Tet*’s holiday, with goodwill and respect whereas corruption in the forms of alleged gift-giving was more formal and often a one-time exchange. Therefore, wildlife products could be considered a ‘suitable’ gift for bribe as they were extremely valuable due to their symbols of wealth (Drury 2009, 2011). Rhino horns are known to be purchased as gifts to government officers and socio-economic elites in Vietnam, and for its hedonic values such as its status- conferring function (Drury 2011; Milliken and Shaw 2012; Wilcox et al. 2013, Dang and Nielsen 2018). In our research, an interviewee who was a government officer mentioned that he had received a whole wild gallbladder once and felt obliged to return the donors special favors whether in work or personal life.

The ulterior motives of the donors and the indebtedness between donors and recipients in the workplace was difficult to understand because interviewees did not directly admit that the gift implies intentional personal gain. The price of a whole gallbladder from wild bears was not disclosed by the donors but according to interviewees, it can range somewhere from VND 50 million to 100 million (\$2,200-\$4,500) at the time given, which exceeds Vietnamese average monthly income of 5.5 millions VND (General Statistic Office 2020) and the monthly salary of the highest-ranking official in the Vietnamese government – Vietnamese President as of 2020 has an official salary of VND 20,8 million according to the resolution 730/2004 issued by the government (2004). Because of this, giving expensive gifts

such as wild bear bile and rhino horns in the workplace can be a sensitive topic and sorting out alleged gift-giving can prove to be a difficult task as mentioned above.

Box 5

Business-related gifting

Interviewer: What was the occasion for the gift?

Interviewee #8: They were my wife's clients. They bought a piece of estate or made some kind of investments and they started earning profits, they gave the bear bile to my wife as a gift.

Male aged 60 resides in Hanoi

Influences On The Usage of Bear Bile Within The Social Networks

Despite the decline in bear bile consumption in current years, there is still a persisting demand for bear bile in Vietnam and especially in Hanoi and Nghe An province (Davis et al. 2019, 2021). Based on our findings, we believe that such demand for bear bile is influenced by the exchange of bear bile as gifts within the social network and the availability of bear bile in the countryside. The act of giving reinforces the consumption of bear bile as a social norm which continues to exert pressure on group members to conform to these expectations due to Confucian traditions of collective societies (Ahuvia and Wong 1998). Availability of widespread farmed bear bile has also been seen as a factor encouraging usage (Drury 2009) and our data further supports the findings that individuals who have more access to bear bile sources use and give bear bile more frequently. Even though both genders drank bear bile with alcohol, male and female respondents slightly differed in their primary usage of bear bile. We found that in support of the findings of Drury (2009), Vietnamese men consumed bear bile primarily with alcohol with other male friends due to peer pressure since drinking is a province of men associated with masculinity in Vietnam, and a way to show respect to the host during social gatherings (Craig 2002; Drury 2009). However, male interviewees in Hanoi said that they hadn't drunk bear bile at restaurants since its ban, but mentioned drinking in private gatherings.

Gift-giving as a factor influencing perception of bear bile efficacy and encouraging usage

We confirmed preliminary findings that bear bile medical efficacy is mainly spread through words- of-mouth (Davis et al. 2019). As gift-giving is a social exchange that sustains relationships, the giving of bear bile continues to facilitate information transmission between donors and recipients and initiates the usage of bear bile. In Confucianism, an individual

identifies oneself in relation to their social groups of similar social status (Ahuvia and Wong 1998). Although young people in Vietnam now emphasize individualistic goals such as economic status, our sample contains older generations with the youngest in their early 30s. Therefore, we believe that consumer behaviors of bear bile mainly are influenced by the pressure from family and peer network. Most interviewees ($n = 31$) who had received bear bile said they already knew about the products' efficacy before receiving it, through word-of-mouth from people within their social networks or personal experiences like witnessing others using the product or using it themselves. This influence from family and friends forms the perception of bear bile efficacy and for some, only initiates consumption after the exchange of gift and information on how to use it. This shows that the interplay between words-of-mouth and actually seeking or using bear bile themselves is sustained through the exchange of bear bile with family and friends. Only a few of the respondents mentioned they spontaneously sought out bear bile for the curing of the medicinal ailments bear bile is generally used for, such as bruising (Davis et al. 2019).

Family pressure

An individual's decisions and actions are influenced by their family network as children are tied to the social norms and value that form through interactions with family members (Hirschman and Vu 1996). Family influences the development of consumer behavior (Moschis et al. 1978), especially in countries like Vietnam with Confucian influence that emphasize family obligations and ties (Hirschman and Vu 1996; Nguyen 2016). In modern Vietnam, children still have a very intimate contact with their family and hold obligations to their family (Hirschman and Vu 1996). Failure to conform to these important duties and obligations can risk an individual losing 'face' and limit that individual's social functioning (Ho 1967). Therefore, giving bear bile as gifts to family members may exert higher pressure on recipients to accept and conform to this behavior. Through family interactions, the consumption and giving of bear bile can become the social norm. Refusing to accept the gift can be seen as a form of disrespect and may damage not only the relationship but also the face of both the donor and recipients. This may also explain the non-reciprocal patterns (fig. 2) because some did not believe in the effects of bear bile despite accepting the gift and therefore, did not reciprocate with bear bile but possibly with other forms of gifts.

For instance, an interviewee mentioned that she accepted bear bile from a cousin who was also interviewed, despite not believing about the efficacy of bear bile. The donor believed that the bear bile would help with the wife's digestion after the removal of her gallbladder. The gift signified a gesture of concern for one's well being so refusing the gift would show disrespect towards the donor. As advised by her cousin, the interviewee drank bear bile for the first time. After using it, the recipient believed that the bear bile "somewhat assisted" her digestion but she didn't want to completely rely on it so she stopped and kept the rest in the fridge. This shows that the exchange of bear bile within close family members can facilitate information about bear bile, and encourages its usage through pressure to agree with one's

family member and keep face. The recipient then gave the helper at her house this bear bile when she was injured at work. This explains the common storage of bear bile in the house in case of an emergency happening to household members or members of the extended family.

The usage of bear bile has become a social norm passing down through generations. Children form their perceptions of bear bile and pick up behaviors from watching their parents using and sharing bear bile. Interviewees often answered that they knew about bear bile and its efficacy through both observations and teaching from their parents or grandparents. An interviewee said that her mother gave her bear bile and told her about bear bile medical efficacy when she began to have her own children who were prone to injuries and bruises (see box 7) . Another interviewee also mentioned that her parents taught her how to use bear bile in case of accidents and said she would continue to teach her children to do so (see box 6). A child is taught to obey their parents and respect parent's teachings, which exert pressure to follow expectations which continues to radiate the usage of bear bile in current years.

Information transmission of bear bile efficacy within family

Box 6

Interviewer: Before receiving bear bile, did you know about its efficacy?

Interviewee #30: The efficacy has been passed down for generations. I used it and saw that it worked so I continued using it. I will also pass the knowledge down to my children. I will tell them if they are wounded or bruised, they should go buy bear bile and apply it on the wounds or if it is a serious injury, they can also dilute the liquid bear bile into warm water to drink, which is also very effective.

Female aged 50 residing in the countryside of Nghe An

Box 7

Interviewee #24: When I started having kids, my mother told me to prepare a bottle of bear bile because children easily get injuries and wounds when they play [...] Someone gave my mother dried bear bile and then she soaked it in alcohol. My mother had three children who all have their own children so she gave me, my sister and my brother each a small bottle. She told us to keep the bottle in the medicine cabinet and use it when the children get injured.

Female aged 43 residing in Hanoi city

Peer pressure

Pressure from peers to drink bear bile is extremely common among male interviewees. Many male interviewees admitted that even though they didn't believe in the benefits of drinking bear bile to prevent alcohol poisoning or increase male stamina, they still drank it because it was expected of them to drink during gatherings. Drinking alcohol is considered to be a social tactic to maintain harmonious relationships among men in Vietnam (Vu 2013), and alcohol consumption is a normalized behavior among male youths and adults (Craig 2002; Lincoln 2016). Moreover, there's a high pressure to comply with the norms of the same wealth groups due to the collective societies in Vietnam and to save 'face' by conforming to expectations from peers (Ahuvia and Wong 1998; Drury 2011; Hoai and Nielsen 2018). The drinking of bear bile often occurs in outings with friends more than colleagues and the host will try to meet social standards expected by his peers by serving these expensive wildlife products (Drury 2011). One interviewee mentioned that he bought wild bear bile often just to share with friends and host social gatherings. These social gatherings allow friends and acquaintances to maintain social relations and accumulate social capital by expanding their networks to those of similar or higher social status. Therefore, there's a pressure to act similarly to one's peer groups and drink bear bile mixed with *ruou* (rice wine) despite disliking the drinks. One male interviewee admitted that despite not believing that drinking bear bile has health benefits, he still drank at past social gatherings because of his friends.

Drinking *ruou* mixed with bear bile became popular with the increasing availability of bear farms during the 10-year period between 1997 and 2006 (Crudge et al. 2018) and this availability facilitated drinking bear bile with friends to become a norm among social groups. Although many interviewees said that they believed this trend in the city has died off since the ban of bile extraction in 2005, one interviewee said that if he could purchase wild bear bile now, he would share it with his friends by inviting them over to drink bear bile. This indicates that despite the gradual decline of drinking bear bile with friends in public, male respondents would still seek bear bile, preferably wild bear bile, to drink with close friends and family members in the private space of home. Such taste for bear bile, induced by the availability of bear farms and the social pressure to drink at gatherings, may influence the current consumption of bear bile in Vietnam.

Box 8

Drinking as social obligations

Interviewee #34: [...] I drank the white wine mixed with farmed bear bile. My friends mixed it with wine so I started drinking it. It did help you consume more alcohol. For example, two people can usually drink ¼ liters but if mixed with 1 CC of farmed bear bile, two people can finish the whole bottle without getting drunk. I think that's the only benefit of drinking farmed bear bile and besides that, I don't think it helps improve your well-being or health at all [...] People gave me bear bile so every time my friends came around, I shared it with them to drink and have fun but drinking did not have any benefits so I stopped.

Male aged 61 residing in Hanoi city

Availability of bear bile and preferences for wild and farmed bear bile

Wild bear bile was believed by most interviewees to have more beneficial medical efficacy than farmed bear bile due to better living and feeding conditions. Therefore, most people still preferred to share wild bear bile with their close family members and friends or give wild products to those outside the inner social circle (see box 10). Most interviewees said that wild bear bile was more difficult to purchase now compared to the past and consider wild products to be “very rare” and “expensive”. This may explain the comparatively low frequency (~once a year) of gifting bear bile as most respondents believed wild bear bile is more suitable as gifts. We speculate that gift-giving based on ulterior motives is likely the main driver of wild bear bile consumption, especially among urban consumers as according to Befu (1968) in his studies of gift-giving in Japan, this exchange of gifts is more common in urban cities than within the community of rural areas. However, in occasions of sharing, interviewees mentioned that both wild and farmed bear bile were used depending on what was available at that moment. As for drinking at gathering, while wild bear bile is preferred, both farmed and wild were consumed with alcohol. The ban on bear bile consumption was perceived by interviewees as the main reason for the decline in drinking and overall mass consumption of bear bile.

There is also reluctance to purchase farmed bear bile from unknown sources and interviewees say they only trust intimates for the sources of bear bile hence the prevalent sharing of bear bile and information transmission within the inner social circles. This concern with “authenticity” for bear products, i.e., that the products come from a real bear, whether wild or farmed, is consistent with findings of previous studies on bear bile consumption in Vietnam (Crudge et al. 2018; Davis et al. 2019). Donors were mostly those who own bear farms or personally know bear farmers or have received wild or farmed bear bile as gifts from people who they can trust. This supports previous research that showed that existing bear farm owners who have a relatively small number of bears (Crudge et al. 2018) may rely primarily on the purchase of select individuals who give bear bile to their close friends,

colleagues and families. Respondents in the countryside said that they consume wild bear bile more than farmed bear bile since they live near the mountains bordering Laos and Cambodia (see box 7) , where bear populations are known to persist (Crudge et al. 2016). In this study site of the Nghe An countryside, there's more access to wild bear and farmed bear sources due to bear populations in neighboring Pu Mat National Park and a still active bear farming industry (Crudge et al. 2016, 2018); a finding that corresponded with recent research showing high use of bear bile in Nghe An (Davis et al. 2021). Among these respondents, there was a stronger belief in bear bile as "the most effective medicine" when it comes to treating bruises, closed wounds and other ailments of the body which explains the recent bear bile usage within the last 1 to 2 years. In contrast, respondents in the city mostly answered they haven't used bear bile and/ or received bear bile from 5 to 10 years ago. Unlike consumers in the countryside who reside near farm bear sources, urban consumers said they did not know where to buy farmed or wild bear bile now due to the decline of demand and bear farms in Hanoi. The bear bile stored in their house was often gifts from other people. Drinking bear bile at gatherings between male was also more common in recent times among the respondents in Nghe An than to those in Hanoi who said they haven't drunk bear bile with other male friends for a long time since the ban of bile extraction has greatly affected this "trend".

Box 9

The availability of wild bear bile in the countryside of Nghe An

Interviewee #28: Most often, the bears here are captured from the mountains and only some bears are farmed. For example, the bear bile sold here usually comes from Laos or Cambodia mountains and is rarely from bear farms.

Male aged 60 residing in the countryside of Nghe An.

Box 10

Gift-giving practices as a key driver of wild bear bile consumption

Interviewee #32: My friends said they only gave me because it was wild bear bile. There was a time when there were a lot of bear farms around here and people were selling farmed bear bile but its efficacy to treat bruises cannot compare with bear bile sourced from the mountains [...] No, I only use bear bile. And I had only used wild bear and had never tried farmed bear. It's also impossible to buy dried bear bile. I can only get it from my friends and family as gifts and the same applies to wild honey. Farmed products are plenty but wild [product] is rare.

Male age 54 residing in the countryside of Nghe An

Interviewee #33: Vietnamese people consider it one of the most precious medicine and often give it to other people. Bear bile is considered precious because in the past, wild bear bile was really rare which made it really expensive. Now, there are lot of bear farms which makes bear bile cheaper but not as effective. The bear has to exercise and climb trees. This kind of bile is much more precious and is considered a great gift to friends and family.

Male aged 70 residing in Vinh city

Interviewee #38: People gave me bear bile on many occasions. Friends who live far away gave bear bile when they visited me while some people shared bear bile to drink at gatherings and parties. Some people send bear bile as gifts, usually close friends. They bought bear bile and gave it to me since we like each other [...] I then shared the bear bile with other people in my social networks like my colleagues and my neighbors. People within my neighborhood get injured and they know I have bear bile, they often come and ask for it so I shared bear bile with them.

Male aged 65 residing in the countryside of Nghe An

Limits of the study

One limitation of the study is that the snowball sampling technique cannot produce a representative sample of all bear bile consumers. The network among respondents closed when no new names were offered. For example, the respondent would be reluctant to give contact to the recommended person if the gift exchange happened a long time ago or if the person did not belong to the close social circles. Additionally, since the interview revolved around the consumption of illegal wildlife products, a mutual trust must be established between the interviewer and the interviewee, which explained the unwillingness of people to recommend "strangers" – those who are outside the social circles of the initial key

respondent. The gift-giving network therefore stayed mostly within the social network of the key respondent whose influence within the structure allowed the interviewer to carry out in-depth interviews. Moreover, it was difficult to investigate gift-giving based on ulterior motives due to its sensitive relationship to bribery.

4. Conclusions

In this study, we provided critical insight into bear bile consumer behavior and the motivations in Hanoi and Nghe An. Among certain social circles, bear bile is still a staple household medicine, frequently stored and shared. The consumption of bear bile has become normalized through generations and familial pressure encourages its use. Personal perception of bear bile medical efficacy is often formed first through words-of-mouth and gifts from family and friends, instead of direct consumption of bear bile. Information about bear bile is passed down throughout generations, from parents to children, among relatives and then shared among friends. This shows the strong influence of social networks on the persistent demand for bear bile and provides insights for demand reduction campaigns in illuminating influencers to target, i.e., elders and respected individuals, and the character of intrinsic social norms.

While family members and close friends share both farmed and wild bear bile more frequently, outside the closed social circles, especially within work and business settings, wild bear bile is purchased more as a gift. Valuable gifts, and sharing resources, acquires social benefits by increasing one's social capital, e.g., through expanding connections. Availability of bear bile also contributes to the continuing usage of bear bile in the countryside where residents near the bear farms hotspot have easy access to bear bile sources; and vice versa, the noted decline in bear bile use in Hanoi was attributed by our respondents to the decline in bear farms in the city, and hence decline in availability. This supports previous research that bear bile farming has not alleviated consumer demand and provided conservation benefits (Davis et al. 2019).

Our insight on bear bile usage and influential members is vital for behavioral change campaigns, which can target key members/influencers who in turn can motivate "downstream actors" such as casual bear bile alcohol consumers (de Lange et al. 2019; Balmford et al. 2021). In addition, such campaigns need to utilize messaging that weakens the social norm of "sharing" bear bile, and/or that emphasizes the social norm of compliance with the Vietnamese Government's regulations and conservation strategy (Balmford et al. 2021). Moreover, our results indicate the need for spatially-distinct campaigns that take into account geographic differences, ultimately affirming long-standing assertions that behavior change campaigns must be targeted according to the specific and distinct audience(s) (Kanagavel et al. 2014).

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