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The TRAFFIC Network is the world's largest wildlife trade monitoring program with offices covering most parts of the world. TRAFFIC is a program of WWF-World Wildlife Fund and IUCN-The World Conservation Union, established to monitor trade in wild plants and animals. It works in close cooperation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

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A WORLD APART?

Attitudes Toward
Traditional Chinese Medicine
and Endangered Species
In Hong Kong and
the United States



TRAFFIC WWF

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A WORLD APART?

Attitudes Toward Traditional Chinese Medicine and Endangered Species In Hong Kong and the United States

by

Samuel Lee, Craig Hoover, Andrea Gaski, and Judy Mills

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EXECUTIVE SUMMARY

Rhinos and tigers are among the world's most threatened species, having experienced precipitous population declines this century as a result of poaching and habitat loss. Poaching has been driven in part by the demand on global markets for rhino and tiger products, a problem which has been addressed only partially by global trade prohibitions. Rhino horn, a substance valued in traditional Chinese medicine (TCM), has been banned since 1977 under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Tiger bone, another substance used in TCM, has been banned from trade by CITES since 1987. These prohibitions have been implemented with mixed success by the primary rhino and tiger consumer market countries, although enforcement efforts increased notably in the early and mid 1990's in several East Asian countries.

The TRAFFIC Network, World Wildlife Fund¹ (WWF), and other conservationists have concluded generally that the continuing illicit commerce has resulted from both weaknesses in law enforcement and a failure to comprehensively address all the threats to these species, which include the on-going demand for medicines made from them. To address the latter, TRAFFIC and WWF have concluded that it is critical to enlist the support of TCM specialists and users in efforts to stem demand for endangered species products. To this end, TRAFFIC and WWF have embarked upon a number of initiatives to identify the consumers of rhino and tiger medicinal products, quantify the demand for these products, and develop incentives for consumers to stop using such products.

This report is a compilation of the sociological marketing research undertaken by TRAFFIC and WWF to statistically determine (1) the demographics of the Chinese communities consuming TCM in Hong Kong and the United States and (2) the attitudes of consumers of TCM who use or have used rhino horn, tiger bone, and other products made from endangered or protected species. TRAFFIC and WWF publish these survey data so conservationists and governments can use them to develop cooperative working relationships with key stakeholders in their countries and regions.

The research results show many similarities in the attitudes of Chinese TCM users in Hong Kong and the United States. TCM plays a substantial role in the health care of Chinese, but TCM use appears to be relatively greater in the United States than in Hong Kong—more than three out of four Chinese-Americans have used TCM as compared to one out of three Chinese in Hong Kong. Hong Kong Chinese rely most often on practi-

¹ WWF is known as World Wildlife Fund in the United States and Canada and elsewhere as the World Wide Fund for Nature.

tioners for TCM advice, while Chinese-Americans rely primarily on family members and practitioners.

Both communities show a willingness to stop using or to decrease their use of TCM containing endangered species, although many say that a change in use would depend on the situation. In spite of this, both Hong Kong Chinese and Chinese-Americans have little knowledge of the ingredients in the TCM they use, and little interest in obtaining that knowledge before using such products. Most Chinese-Americans and Hong Kong Chinese stated they do not see a connection between use of TCM containing endangered species and the population decline in those species.

TRAFFIC and WWF recommend the following actions for Hong Kong:

1. ***Influencing the Influential and the End User.*** TCM practitioners and shop assistants have great influence over the choices made by TCM users who do not attempt to learn the content of TCM prescribed to them. Outreach and education efforts should be geared toward the members of the professional TCM community and their customers in Hong Kong.
2. ***Encouraging the Use of Substitutes and Alternatives.*** The Hong Kong government and TCM health industry should encourage the research, development, and use of effective and sustainable alternatives to medicines made with wildlife banned from international trade.
3. ***Regulating the TCM Industry.*** The Hong Kong government should consider the issue of endangered medicinal species in formulation of the regulatory system now under consideration; incorporate wildlife conservation concerns into baseline training for practitioners; and provide for professional censure for licensed TCM practitioners trading illegally in wildlife derivatives.
4. ***Continuing Law Enforcement Vigilance.*** The Hong Kong government should continue its vigilance in enforcing existing laws and in imposing penalties large enough to dissuade trade in illegal products, and enhance its efforts to inform the public of the illegality of medicines made from endangered species.

TRAFFIC and WWF recommend the following actions for the United States:

1. ***Influencing the Influential.*** Chinese-Americans highlighted the importance to them of the professional TCM community in their selection of medicines and treatment. Therefore, the long-term active involvement of the professional TCM community in outreach efforts should be solicited and encouraged by the U.S. government and conservationists.

2. **Highlighting Alternative Medicines Already Available.** Survey results clearly indicated that alternatives and substitutes would be acceptable to users if the alternatives were equal in efficacy to endangered species products **and** were recommended by a person trusted by the user. The professional TCM community therefore needs to provide information about alternatives to consumers and sellers of manufactured medicines.

3. **Enlisting Local Communities.** All conservationists and communities using TCM throughout North America can, indeed *should*, become endangered species advocates and should address impacts on endangered species through their own grass-roots approaches. The research results presented here, and other outreach efforts being undertaken by organizations such as the American College of Traditional Chinese Medicine, WWF, and the U.S. Fish and Wildlife Service, can be of assistance in this regard.

4. **Targeting Outreach to All stakeholders.** TRAFFIC and WWF encourage nongovernmental and governmental organizations in other countries to use this information and begin to develop outreach initiatives in tiger and rhino consuming countries and range states. Other stakeholders involved in or affected by poaching and illegal trade involving these species need to be identified so that their support can be enlisted to alleviate such threats.

5. **Tightening U.S. Legal Loopholes.** The U.S. government should actively implement the 1998 Rhino and Tiger Product Labeling Act, which prohibits the import, export, and sale of products containing or purporting to contain tiger or rhino products. Accordingly, the U.S. Fish and Wildlife Service should develop a national strategy to ensure full enforcement of the law, and to gather and disseminate intelligence and information on source or stockpiling countries, other markets, and the legal status of domestically held supplies of such products.

WHAT'S IN AN ATTITUDE?

Modern conservation science recognizes that identifying and solving the human equation in a wildlife conservation problem may be one of the most important keys to successfully resolving that problem. Identification often begins with determining local human communities' attitudes or opinions on the value of wildlife and the habitat in which the wildlife exists. Understanding these attitudes allows for the formulation of incentives to preserve or protect these same wild lands and wildlife. Such incentives may include aesthetic or altruistic satisfaction, economic enhancements or benefits, or the fulfillment of cultural needs. Local community involvement has been used effectively as a conservation tool for protected areas and endangered species, particularly where human economic growth and development has a much higher priority than the preservation or protection of wildlife and biodiversity.

In the United States and Europe, similar tools have been used, perhaps not very effectively, to enlist human communities in international wildlife or biodiversity protection and preservation. These efforts often drew upon traditional Western conservation concerns, but focused only on one set of stakeholders. Western conservationists rallied these human communities around such campaign slogans such as “only elephants should wear ivory,” or “save the rain forest.” These campaigns were effective in eliminating most Western demand for ivory and in instigating national policies on other countries' rain forest preservation, yet the campaigns' ultimate goals—cessation of elephant poaching and halting rain forest destruction—have not yet been achieved. This lack of success is caused, in part, by a failure to address the human equation in the countries in which the conservation problem was occurring. As a result of a failure to consider the attitudes of all the stakeholders and to enlist their involvement, many conservationists have been labeled “conservation imperialists” and are still seeking the road to resolution.

In the mid-1990s, conservationists became more and more aware of the ineffectiveness of trade prohibitions for certain endangered species, particularly to rhinos and tigers. In spite of long-term prohibitions at national and international levels, poaching and illegal trade of, and presumably demand for, the parts of these endangered species seemed to be strong and increasing. The TRAFFIC Network and World Wildlife Fund (WWF), as well as other conservationists, believed the weakness of these prohibitions resulted primarily not from the failure of international regulations or law enforcement, but from a failure to address all of the human-caused threats (poaching, illegal trade, habitat loss, human conflict, and so on), to these animal populations. More specifically, two of the most immediate threats arose from a combination of influences: (1) human cultural and health demands and subsequent trade for the products made from parts of these endangered species, and (2) the economic incentives for poaching of local and very poor human communities coexisting with these species. Experience led a growing number of

conservationists to discover that all of the human stakeholders in rhino and tiger conservation needed to be identified, as well as their attitudes and needs to be considered.

TRAFFIC and WWF began to methodically address international demand. Initially, TRAFFIC East Asia in Hong Kong and later TRAFFIC North America in the United States, working jointly with and partially financed by World Wildlife Fund in the United States (WWF), designed two separate but comparable projects. These projects were intended to identify the consumers of medicinal products made from rhino and tiger parts, quantify the demand for the products, and begin to identify methods and means to provide incentives to this set of stakeholders so they can work to resolve the illegal trade problem.

This report is a compilation of the sociological marketing research approach that TRAFFIC and WWF took to statistically determine the as yet unsolicited attitudes of a recognized group of stakeholders, that is, the consumers of traditional Chinese medicine who use or have used rhino horn, tiger bone, and other endangered or protected species products. TRAFFIC and WWF publish these data so conservationists elsewhere can use them to develop cooperative working relationships with key stakeholders in their countries and regions.

THE WORLD TRADE OF RHINO AND TIGER PARTS FOR MEDICINES

International trade in rhino horn, a substance that was once widely used in traditional Chinese medicine (TCM), has been banned since 1977 under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Similarly by 1987, CITES completely banned trade in tiger bone, which was also widely used in TCM. Yet trade in rhino horn and tiger bone has continued.

By January 1994, the major consuming markets of China, Hong Kong, South Korea, and Taiwan had banned domestic trade in rhino horn and tiger bone, effectively shutting down the large-scale manufacturing of medicines containing parts of these endangered species. In November 1994, recognizing that trade continued despite the international and domestic bans, the Ninth Meeting of the Conference of the Parties to CITES passed resolutions asking parties to increase measures to stop illegal trade in rhino and tiger parts, derivatives, and products and to work with TCM communities to do so.

However, illegal trade continued, albeit at a much lower level. In June 1997, at the Tenth Meeting of the Conference of the Parties, CITES delegates revised the tiger resolution, asking all Parties and non-Parties to redouble efforts to stop illegal trade in tiger bone and its medicinal derivatives. In addition, they passed a new resolution on traditional medicine that underscored the importance of addressing traditional medicine as a CITES issue unto itself and one that affects numerous animal and plant species in the wild. This resolution recognized the importance of traditional medicine systems to 80 percent of the world's population, and it encouraged collaboration with traditional medicine communities in order to prevent unsustainable use of medicinal species.

Meanwhile, TRAFFIC investigations had found TCMS claiming to contain rhino horn and tiger bone available in Australia, Canada, China, the European Union, New Zealand, and the United States despite CITES and domestic trade bans (Callister 1995; Gaski 1998; Mills 1997). These findings confirm previous sociological research indicating that people may not obey laws that contradict what they believe is a greater good for humanity (Kidder 1993). This research is supported by the fact that some TCM specialists continue to state that the bans on the use of rhino horn and tiger bone have hampered their ability to alleviate human suffering.

Some conservationists now say that laws and law enforcement will not be enough to stop all illegal trade in medicines containing rhino horn and tiger bone. There is a growing belief that stopping all trade will depend on enlisting TCM specialists and users in efforts to conserve rhinos and tigers, as well as finding and promoting the use of TCM-approved substitutes for medicines containing rhino horn and tiger bone.

ENLISTING STAKEHOLDER SUPPORT

The immediate goal of enlisting the support of TCM specialists and users in conservation of rhinos and tigers is to convince them to willingly stop using medicines containing or purporting to contain rhino horn and tiger bone, thus reducing residual demand that appears to be fueling black market trade. However, these key stakeholders—the consumers—cannot be enlisted unless they are found. Once the consumers are identified, relevant government agencies and conservation organizations could conceivably design appropriate, targeted outreach programs to raise awareness and, perhaps, to engender a willingness to avoid illegal trade.

These considerations led TRAFFIC East Asia to develop a quantitative approach to documenting and better understanding the consumer demand for tiger bone, rhino horn, and their medicinal derivatives in Hong Kong. TRAFFIC East Asia contracted the sociological research arm of a local university and initiated a scientifically based telephone survey of Hong Kong Chinese in order to document the demographics of possible users of medicines containing rhino horn and tiger bone. In addition, to protect endangered species, the survey sought to learn more about those who use TCM and their attitudes toward regulating TCM. Hong Kong Chinese were chosen for this unprecedented study owing to Hong Kong's past role as a major consumer, manufacturer, and international entrepot for such medicines, and owing to the small but consistent illegal trade that continues in Hong Kong in spite of the risk of substantial fines and penalties.

After reviewing the results of the Hong Kong survey, TRAFFIC North America asked whether Chinese living outside Asia held the same attitudes, particularly those in the United States. TRAFFIC North America questioned whether Western culture would influence or change the attitudes of Chinese living outside of Asia in such a way that the Hong Kong results would not be applicable to Chinese populations living in the West.

In July 1997, a professional research marketing firm hired by TRAFFIC North America and World Wildlife Fund in the United States conducted a telephone survey of Chinese-Americans. The firm used a survey slightly different from the Hong Kong survey as it polled Chinese-Americans on their use of traditional medicines. The survey was designed to document the respondents' general pattern of use of medicines, their knowledge of the content of the ingredients in them, and their willingness to change their use if they knew that their medicine contained or purported to contain endangered species parts and products as listed in Table 1. This randomly selected and statistically valid telephone survey was conducted nationwide to illustrate patterns of use and, more important, to provide strong statistical data to qualify consumer demand in the United States. Perhaps even more important, TRAFFIC North America and WWF in the United States wished to determine if Chinese living in Western countries would adhere to this aspect

of their culture in spite of the influence of the less utilitarian² attitude toward wildlife (Kellert 1996) that pervades Western cultures.

Table 1. Traditional Chinese Medicinal Use of Endangered or Regulated Wild Animal and Plant Parts

| Wild Animal or Plant Parts Used | Medical Symptom ³ or Indication Treated |
|---------------------------------|---|
| Bear Gall | High fever and convulsions; spasms; hot skin lesions; red, painful, swollen eyes; trauma; sprains; swelling and pain; hemorrhoids |
| Elk Horn | Impotence; cold extremities; lightheadedness, tinnitus; soreness and lack of strength in the lower back and knees; frequent, copious, clear urination; chronic ulcerations |
| Ginseng Root | Shortness of breath; cold limbs; high fever and profuse sweating; weak pulse; wheezing/shortness of breath; labored breathing; lethargy; lack of appetite; chest and abdominal distention; chronic diarrhea; anxiety, insomnia, forgetfulness; restlessness |
| Musk Grains | Convulsions; delirium; stupor and fainting; closed disorders; tetanic collapse; phlegm collapse; seizures; swelling and pain; toxic sores; carbuncles; coronary artery disease |
| Rhino Horn | Extreme heat or heat signs; high fever; erythema; purpura; nosebleed; vomiting of blood; convulsions; delirium; manic behavior |
| Tiger Bone | Migratory joint pain and stiffness; paralysis; weak knees and legs; spasms; stiffness and lower back pain; pain in bones |

Source: Bensky & Gamble 1990

² Kellert (1996) defines utilitarian value as the practical and material exploitation of nature benefiting the individual and human society through physical sustenance and security.

³ TCM treats the whole body or system, rather than, as does Western medicine, the symptom.

RESEARCH SITES: HONG KONG AND THE UNITED STATES

Markets and Trade Control in Hong Kong

Import, export and possession of rhino horn was banned in Hong Kong in 1988 under the Animals and Plants (Protection of Endangered Species) Ordinance. In 1989, restrictions were extended to cover prepackaged manufactured TCM containing or claiming to contain ingredients made from rhino. Import, export, and possession of any products claiming to contain tiger bone were prohibited effective January 29, 1994. In 1995, the fine for trade or possession of rhino horn, tiger bone, their derivatives, and products claiming to contain their derivatives was raised to a maximum of HK\$5 million (US\$650,000) and up to two years in prison.

Since these prohibitions, some of the toughest in the world, have been put into place, a residual trade in these products has continued in Hong Kong. In April 1996, two shops selling TCMs were raided by the Agriculture and Fisheries Department, the CITES Management Authority in Hong Kong. Prepackaged manufactured TCM claiming to contain tiger bone and rhino horn were found in the shops. The owners were prosecuted, and subsequently convicted and fines of HK\$250,000 (US\$32,300) and HK\$150,000 (US\$19,400) respectively, were imposed. Between December 1994 and February 1997, there were 596 seizures and 242 prosecutions for illegal trade in or possession of tiger derivatives and TCM in Hong Kong. Among the items seized were 40,794 packets of medicine and 12 bottles of wine labeled as containing tiger bone, 10.8 kg of bones claimed to be from tigers, 25 fake tiger penises, and 16 fake tiger paws. From 1991 through 1996, Hong Kong authorities seized more than 3,000 packets of medicine claiming to contain rhino horn, four pieces of rhino horn, and 17.5 grams of rhino horn scrap.

This trade continues despite extensive public awareness efforts by the government and stiff penalties handed down by the judiciary, thus suggesting a stubborn residual demand for medicines containing rhino horn and tiger bone. This residual demand seems to back suggestions by at least one sociologist (Kidder 1983) that laws do not change practices that are deeply rooted and accepted in cultural tradition and that serve a perceived greater good.

Markets and Trade Control in the United States

The trade in rhino horn, tiger bone, and other endangered species and their parts is governed by a number of laws and regulations in the United States. Among the most important of these laws is the Endangered Species Act (ESA), which among other things, implements CITES and the Lacey Act.

The ESA prohibits the import and export of endangered and CITES-listed species, as well as the sale or offer for sale of endangered species in interstate commerce. The penalty for violation of the ESA is up to one year in jail and a fine of US\$100,000 (HK\$773,00) for an individual, and a fine of US\$200,000 (HK\$1,545,000) for an organization or business. Further, as a CITES Party, the United States prohibits trade contrary to the Convention, as well as possession of specimens traded contrary to the Convention. The United States implements CITES through the ESA, and violations of the Convention carry the same penalties as above.

International trade in rhino horn has been globally prohibited under CITES since 1977, while both international and interstate trade have been prohibited under the ESA in the United States since 1980 (except for the African subspecies, the southern white rhino, which is not listed under the ESA). Similarly, international trade in tiger bone has been globally prohibited by CITES since 1987, while both international and interstate trade have been prohibited under the ESA in the United States since 1973. Individual states are left to regulate intrastate trade, and only a handful have developed laws that would apply to foreign species. Few states prohibit trade within their borders in tiger bone, rhino horn, or their endangered species medicines.

In addition, the Lacey Act is an umbrella law that allows for enforcement of any law, regulation or treaty of the United States; any U.S. state law or regulation; or any foreign wildlife law. For example, a wildlife product possessed in violation of Hong Kong law and imported to the United States could be seized under the Lacey Act. Penalties for violation of the Lacey Act are up to five years in jail and a fine of US\$250,000 (HK\$1,933,000) for an individual, and a fine of US\$500,000 (HK\$3,865,000) for an organization or business.

The Rhinoceros and Tiger Product Labeling Act, an amendment of the Rhinoceros and Tiger Conservation Act of 1994, gives the U.S. Fish and Wildlife Service the legislative power to keep products claiming to contain rhino and tiger parts off store shelves. The Act passed in late 1998 prohibits the import, export, and sale of any product intended for human consumption or application and containing, or labeled to contain, any substance derived from any species of rhino and tiger. The Act carries a penalty of up to six months in prison and fines of up to US\$12,000 (HK\$92,400) per violation.

Despite strong laws and enforcement and substantial penalties, the United States continues to uncover illegal trade in endangered species to supply the demand for certain TCM products. For example, in September 1994, a Chinese national was intercepted by U.S. Customs attempting to smuggle to the United States a tiger skeleton and a commercial quantity of prepackaged manufactured TCM containing or claiming to contain endangered species. He was later sentenced to 21 months in prison (Anon. 1995). In another case, four Chinese nationals were arrested and charged with both smuggling

and violations of the ESA for the illegal importation of commercial quantities of TCM containing or claiming to contain endangered species, including tiger bone and bear bile (Anon. 1996) Further, in a survey of TCM shops in seven North American cities, TRAFFIC found that prepackaged manufactured TCM containing or claiming to contain rhino horn and tiger bone are still readily available in the United States and Canada (Gaski 1998).

THE SURVEYS' GOALS AND OBJECTIVES

Although the overall goals of the two surveys analyzed and discussed in this report were essentially the same—to quantify and qualify consumer demand for TCM containing or purporting to contain endangered species—the objectives were slightly different owing to regional priorities and needs.

Hong Kong

TRAFFIC East Asia undertook a sociological survey of Hong Kong Chinese attitudes toward the consumption of wildlife as medicine in order to learn more about the demographics of those who continue to use rhino horn and tiger bone in the face of high legal and financial risks. TRAFFIC East Asia hoped that learning more about the Hong Kong market for endangered species and the Hong Kong Chinese attitude toward wildlife conservation would help guide future public awareness and education efforts, as well as aid law enforcement.

It remains clear from continuing law enforcement cases that some residents of Hong Kong may still be using rhino horn, tiger bone, and their derivatives as medicines, so this survey was designed to see what percentage of Hong Kong's population might be potential consumers of such products. TRAFFIC East Asia staff also felt that it was necessary to ask questions that were indirect because of the ban on the trade and possession of rhino horn and tiger bone and their derivatives. Otherwise, as shown in other TRAFFIC surveys (Mills 1993), respondents would have been reluctant to discuss the subject matter at all.

In summary, the survey was designed to do the following:

1. Scientifically document the demographics of Hong Kong Chinese who use wildlife as medicine,
2. Scientifically document the demographics of those who have used medicines containing rhino horn, tiger bone, or both, as well as the demographics of those who would persist in such use despite knowledge of legal prohibitions on such use,
3. Identify Hong Kong Chinese attitudes toward conservation of endangered wildlife; and,
4. Guide communications with users of endangered species as medicine in the hope of enlisting their support for conserving endangered species, thereby stopping illegal trade.

The United States

Concerns about continued trade in TCM containing endangered species as well as the availability of such products in the United States, prompted TRAFFIC North America and WWF in the United States to undertake a sociological survey of Chinese Americans to identify the demand for and use of such products, as well as the attitudes of Chinese Americans toward the use of such medicines and the conservation of endangered species.

The main objectives of the U.S. survey were to obtain statistically valid data to qualify consumer demand in the United States and to determine, by comparison to the Hong Kong survey, if Chinese living in Western countries would adhere to this part of their culture in spite of the influence of the far less utilitarian attitudes toward wildlife that are characteristic of Western cultures (Kellert 1996). In addition, attitudinal information was sought for use in designing messages aimed at changing consumption patterns for these medicines in the United States.

More specifically, the objectives were as follows:

1. Qualify and quantify TCM use among Chinese-Americans and identify a demographic profile of TCM users,
2. Determine awareness of and attitudes toward endangered species and the use of these animals in TCM,
3. Guide development of persuasive outreach messages to eliminate or reduce the use of TCM containing endangered species ingredients,
4. Guide communications with TCM users on the issue of endangered species.

NARROWING THE FOCUS: SURVEY METHODS

Hong Kong

Commissioned by TRAFFIC East Asia, an academic sociological research facility (Social Science Research Centre of the University of Hong Kong) conducted a public opinion program (POP) in the form of a structured questionnaire in July 1996. The objective of this POP was to scientifically document Hong Kong Chinese attitudes toward wildlife and TCM and the Hong Kong Chinese use of wildlife as medicine and food.

The target sample population consisted of Cantonese-speaking residents aged 18 or older. Because limited data existed about the demographic profile of TCM users in Hong Kong, a random sampling method was used, instead of a stratified or quota sampling method, to select respondents.

Samples were selected randomly by the research facility's standard POP sampling method, in which telephone numbers were first drawn randomly from residential telephone directories as "seed numbers." Additional numbers were generated by computer, using the facility's "seed plus/minus 1, 2" method, so as to include possible unlisted telephone numbers. Duplicated numbers, if any, were eliminated, and the final set of telephone numbers was chosen randomly for dialing.

Interviews were conducted in Cantonese by telephone on the evenings of July 8 and 9, 1996. If more than one legitimate respondent was available in a targeted household, the household member whose birthday would come next was asked to respond. The survey achieved 1,157 successful telephone interviews, representing a response rate of 54.3 percent, which roughly compares to other POPs conducted by the research facility. The standard error is less than 1.5 percent. The survey questions and the percentage of respondents replying to each question are found in Appendix 1.

The questionnaire was designed by TRAFFIC East Asia with assistance from the research facility. Apart from questions used for sampling purposes, the questionnaire consists of six questions on respondents' use and knowledge of TCM in general, eight questions on the use of TCM with derivatives of wild animals, six questions on the respondents' attitude toward wildlife conservation, seven questions on the consumption of exotic animals and tonics containing derivatives of some selected wild animals, and seven questions on personal information to facilitate demographic analysis. Discussion of food and tonic use is not included in this report and has been published in a separate report by TRAFFIC East Asia. The English translation of the survey questions in Appendix 1 is literal and may seem awkward or ambiguous.

The United States

Focus groups were conducted among Chinese-Americans living in San Francisco in March 1997 to help identify attitudes and to assist in forming new questions and Americanizing the Hong Kong survey questions. Two groups were conducted—one among men and women who had been living in the United States for more than five years, and one among men and women who had been living in the United States for five years or less. The groups were conducted in Cantonese⁴ by a Chinese-American moderator. The groups were recorded on audiotape, and transcripts of the English translation were analyzed for this report.

Following the focus groups, the U.S. professional research marketing firm (The Mellman Group of Washington, D.C.) developed survey questions incorporating the objectives of TRAFFIC North America and WWF in the United States and using or modifying the Hong Kong survey questions based upon the findings of the U.S. focus groups. For these reasons, some of the U.S. survey questions are not exactly like the Hong Kong questions, other Hong Kong questions were not used for the U.S. survey, and new questions were added to the U.S. survey.

The survey sample had two components—a nationwide sample of ethnic Chinese-American households and a City of San Francisco sample of ethnic Chinese-American households. Telephone numbers for these interviews were generated by a sampling firm (Survey Sampling, Inc.) which developed the survey sample using listed surname databases of ethnic Chinese, Korean, and Vietnamese surnames to ensure representation of surnames common to more than one ethnic group. To ensure accurate geographic distribution of the survey, the national sample was stratified by region according to 1990 census data on the U.S. Chinese population.

Interviews were conducted in August 1997 by a San Francisco marketing firm that has experience working with Asians (Hispanic & Asian Marketing Research). A total of 635 interviews were conducted—409 interviews nationwide and 226 oversample interviews in San Francisco. Interviews were conducted in the language of the respondents' choice. These were Cantonese (38 percent nationally, 52 percent in San Francisco); Mandarin (30 percent nationally, 15 percent in San Francisco); and English (32 percent nationally, 33 percent in San Francisco).

To analyze the national results, the San Francisco oversample was weighted to its proper

⁴ Most of the Chinese-Americans and Chinese immigrants living in San Francisco are from southeast China or Hong Kong. Therefore, on the advice of the Asian marketing firm conducting the focus groups, the discussions were held in Cantonese, the language spoken by Chinese from those regions. Simultaneous translation into English was done during the actual discussions for non-Cantonese speaking observers and later analysis.

proportion for the distribution of Chinese in the United States (14.7 percent). The interpretation of all sample survey results is subject to possible sampling error; that is, the results of a sample survey may differ from those, which would be obtained if the entire population were interviewed. The margin of error for the national sample is +/- 4.4 percentage points at the 95 percent confidence level. The margin of error for subgroups varies and is slightly larger. The survey questions and the percentage of respondents for each question are found in Appendix 2.

HONG KONG ATTITUDES

The results of the survey are presented and discussed below under three broad categories: general pattern of TCM use, use of TCM with wild animal parts as ingredients, and attitudes toward endangered species.

Pattern of TCM Use

Among the 1,157 respondents interviewed in this survey, 403 (35 percent) said they had taken or used TCM⁵ at least once. This group will be referred to as “TCM users.” Another 746 (65 percent) claimed they had never used TCM before and are termed as “non-TCM users.” The “use rate” of TCM among the adult population was therefore found to be 35 percent, or about one in every three adult Hong Kong Chinese use or have used TCM. Women are more likely than men to be regular TCM users.

However, of the 403 TCM users, only 19 percent of TCM users (77 of 403 respondents), or 6.8 percent of the total sample, were regular users. This result is generally consistent with the findings of previous inquiries into the medical consultation pattern in Hong Kong, showing that between 6 and 10 percent of the population consulted TCM practitioners (Hedley 1990; Anon. 1990; Anon. 1991; Anon. 1994; Wong *et al* 1993).

Results showed that 26 percent of TCM users obtain advice from TCM practitioners, while another 9 percent obtain advice from TCM shop assistants (Figure 1). These two sources grouped together formed the largest referral group (35 percent) for TCM users. Family members and relatives formed the second largest referral group (24 percent). However, if this group is expanded to include friends, neighbors, and colleagues (identified as relatives and friends in the survey) the figure goes up to 32 percent. Information acquired through the mass media accounted for another 17 percent.

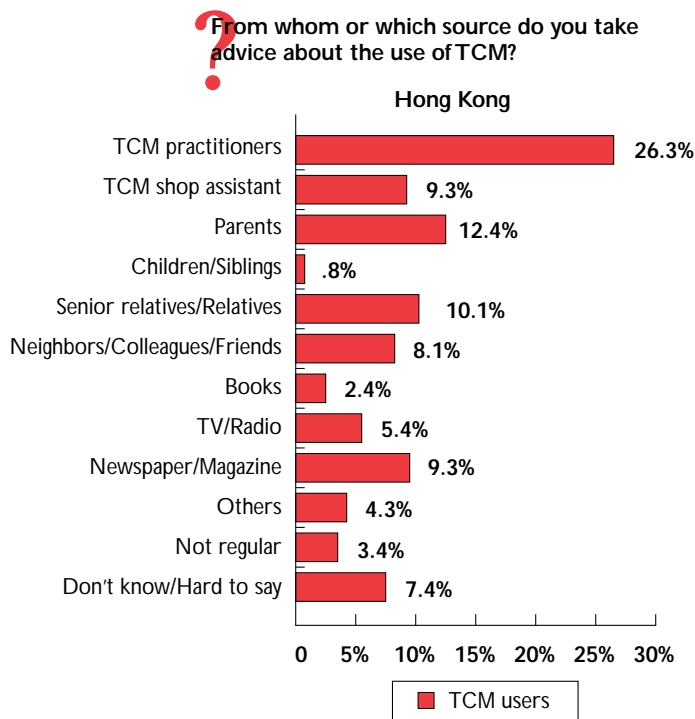
⁵ No definition of TCM was given to the respondents. However, in an attempt to clarify the term, TCM, the respondents were given examples of animal parts used in TCM — elk deer horn, musk deer, and so on. These examples may have led respondents who use or have used other species medicines to answer “no” to this question. Therefore, general TCM use in Hong Kong may be actually be higher than the respondents answers to this question reflect.

More than half of TCM users (53 percent) said they would not try to learn the contents of TCM products before using them. Only 34 percent said they would do so, while another 11 percent said they sometimes would try to learn the contents.

If one takes into account that most TCM users would not try to learn the contents of TCM products, and that TCM practitioners and shop assistants together constitute the largest group who influence TCM users, workers in the TCM community may be the most influential factor in determining whether wild animal ingredients are consumed.

Survey results show a very strong belief that TCM has advantages over other western medicines. Approximately 80 percent of TCM users in Hong Kong agreed that TCM can sometimes treat diseases that cannot be treated by Western medicine.

Figure 1

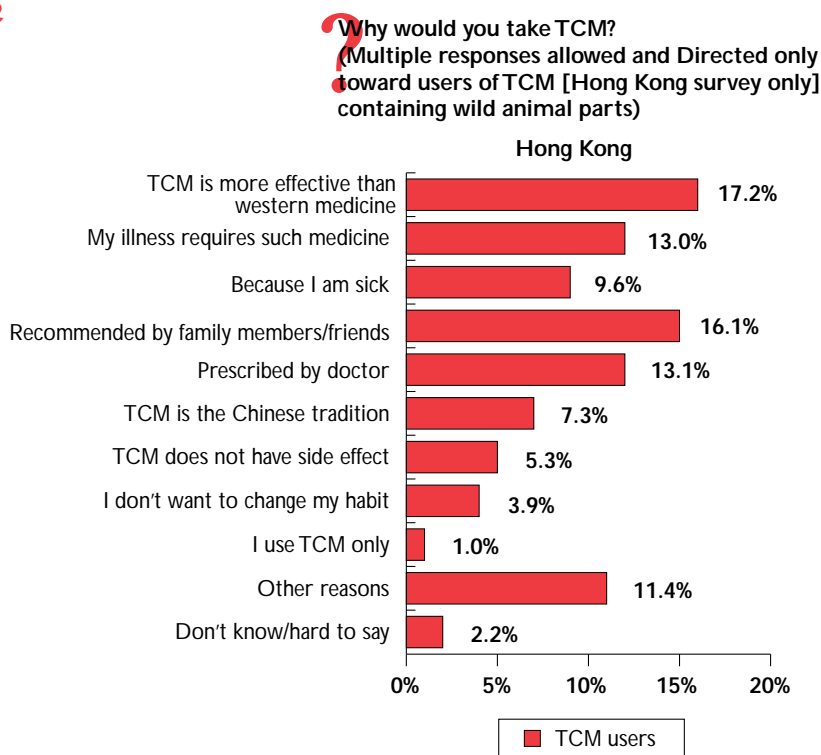


Use of TCM Containing Wild Animals as Ingredients

Most TCM users (59 percent) said they would not take TCM that contained wild animal ingredients, while 20 percent said they would and 13 percent said it would depend on the situation. However, given that most TCM users don't know the ingredients in the TCM they use, there is some doubt as to whether TCM users would be aware that their TCM contains wild animal ingredients—if they did use such TCM.

Respondents who said they would use TCM containing wild animal ingredients gave several reasons for doing so (Figure 2). The medicine's curing power was most frequently cited (20 percent of the respondents, and 17 percent of all responses given). This was followed by recommendations by family members or friends (18 percent of respondents, 16 percent of all responses). Only 7 percent cited Chinese tradition as a motivation and 5 percent cited TCM's lack of side effects. Grouped under broader categories, 40 percent of the responses were illness related, while 29 percent related to being influenced by others.

Figure 2

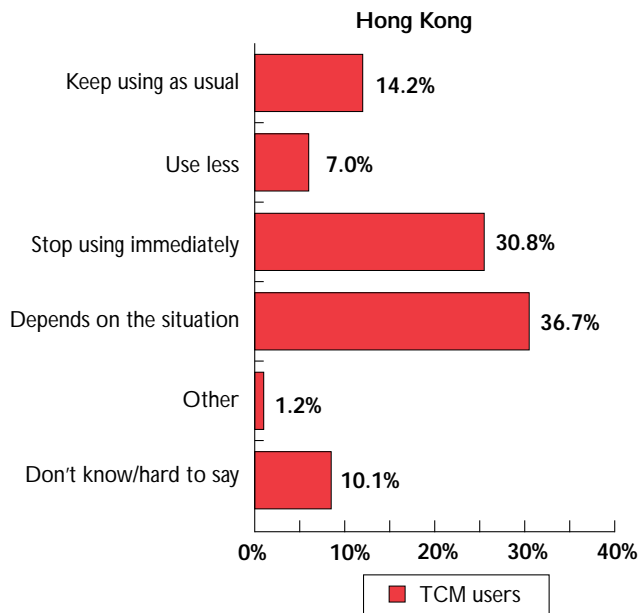


Respondents who would refrain from using TCM with wild animal parts (but were TCM users themselves) gave several reasons for not using TCM containing wild animal ingredients. Although most (32 percent) gave no reason, the most frequently indicated reasons related to (1) lack of a perceived need (21 percent of all responses), (2) concern for wildlife (14 percent), and (3) a belief that they were prohibited by law (10 percent).

Nearly one-third (31 percent) of those who might use TCM containing wild animal ingredients (41 percent of all TCM users) said they would stop using such TCM immediately if prohibited by law, while 7 percent said they would use less (Figure 3). Only 14 percent (or 6 percent of all TCM users) said they would continue to use the TCM as usual. However, more than a third (37 percent) said their decision “depends on the situation.” For those who might continue to use TCM containing ingredients from animals protected by law, 41 percent would use them only when they believed that Western medicine failed or in a case of extreme illness, while 24 percent would continue to use such TCM when prescribed by a practitioner.

Figure 3

What would you do if the TCM you use contained ingredients from animals protected by law?
Directed only toward TCM users who use TCM containing wild animal parts, [base =166]



Most respondents (64 percent) showed no preference at the sales counter for TCM derived from wild animals over those bred in captivity. Only 14 percent said they were prepared to pay more for animals taken from the wild. Among those wishing to pay more for TCM containing wild animals, respondents with less education were more likely to do so than those with higher education.

Attitudes Toward Endangered Animals

When asked to rate their level of concern for endangered species, more TCM users than nonusers said they were very concerned or quite concerned (73 percent versus 51 percent). Within the group “TCM users,” 67 percent of users of TCM with wild animal parts and 77 percent of users of TCM without wild animal parts were very concerned or quite concerned about endangered species.

Unlike the findings by two researchers (Siu 1990; Tranter 1996) which concluded that higher education has no significant effect on attitudes, this survey found that education does appear to play a role in shaping attitudes toward wildlife and the use of wildlife as TCM. Similar to the findings of other research (Arcury and Christianson 1993), respondents with higher educational attainment (72 percent) show more concern about environmental issues than did respondents with lower educational attainment (42 percent).

The survey results show that occupation also plays a role in concern for endangered species. Though student respondents show the most concern (75 percent) as a group, slightly more professionals and semi-professionals respondents (66 percent) expressed concern about endangered species than did other occupation groups respondents, such as clerical workers (63 percent), production workers (57 percent), and housewives (51 percent).

Further, younger respondents appear to be more concerned about endangered species than older respondents to the survey, confirming the findings of a number of previous studies (Abramson and Inglehart 1992; Arcury 1990; Caron, 1989; Eyerman and Jamison 1991; Inglehart 1990; Inglehart and Abramson 1994; Tranter, 1996; Van Leire and Dunlap 1980; and Watts and Wandesforde-Smith 1981).

Nearly three-quarters (74 percent) of TCM users supported the idea that there should be laws prohibiting the use of endangered species, while only 7 percent did not support such a prohibition (Figure 4).

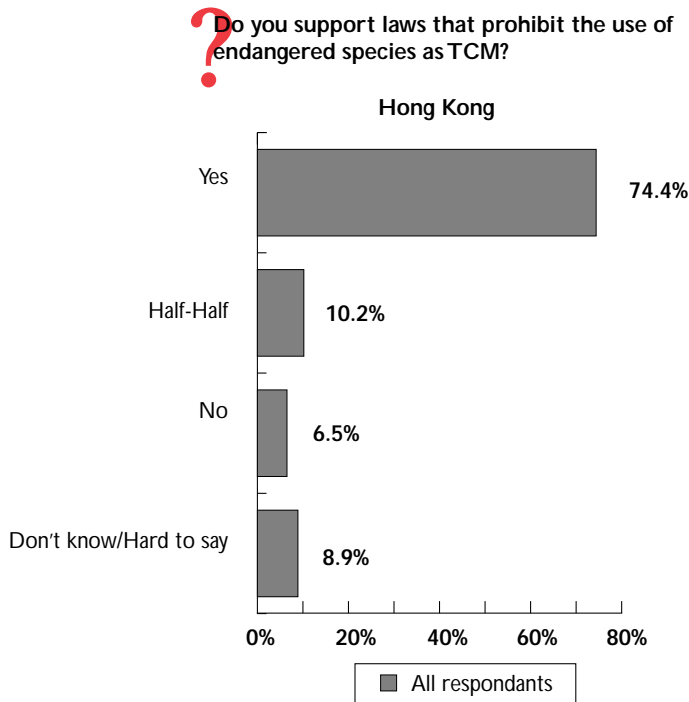
Further, more respondents with higher education attainment (85 percent) expressed support for laws that prohibit the use of endangered species in TCM than did respondents with less education (56 percent). This result supports previous findings that education demonstrates a significant positive correlation with positive attitudes toward environmental concerns (Arcury 1990).

While about 41 percent of all TCM users might use TCM containing wild animal ingredients, only 6 percent of all TCM users, and 24 percent of users and potential users combined, would keep using TCM even if they were or became aware that the TCM they use contained endangered animals protected by law.

More than three-quarters (77 percent) of all respondents believed that respondents should stop using some TCMs in order to help save endangered animals. Only about 5 percent expressed disagreement. Another researcher (Chan 1996) previously had a similar finding, with about 84 percent of his respondents saying they would refuse to take TCM containing ingredients from endangered species.

One might suggest that such overwhelmingly positive conservation responses are due to the fact that the most Hong Kong Chinese do not use TCM and would, therefore, not be affected if TCM with endangered species were not used. However, the results of this survey found that among those respondents who believed respondents should stop using

Figure 4



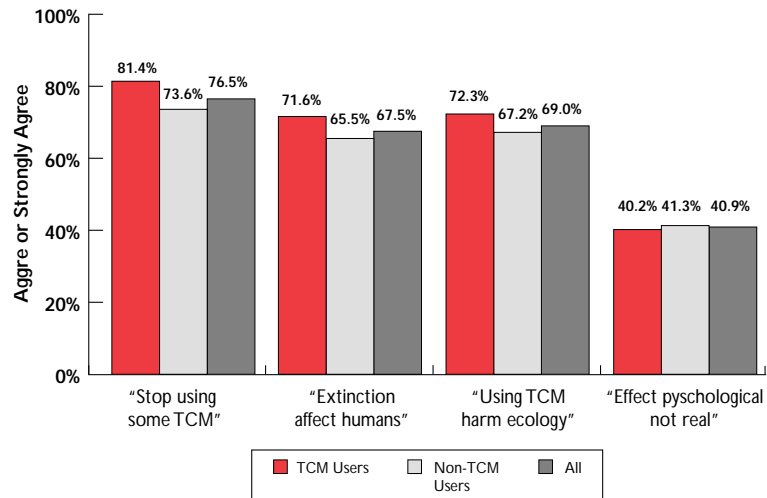
some TCM to save endangered species, more TCM users (81.4 percent) expressed support than did non-TCM users (73.6 percent) (Figure 5).

However, age and education do affect these attitudes. More younger respondents and respondents with higher education expressed their willingness to give up some TCM than did older respondents and respondents with lower education attainment.

About 68 percent of the respondents believed that humans would be adversely affected if wild animals were to become extinct. This is consistent with the findings of Chan (1996), where two-thirds of respondents disagreed that the impact of killing an excessive number of wild animals will be balanced out in the long run. These findings are also similar to that of Hausbeck *et al* (1992), in which 77 percent of a group of 3,200 respondents agreed that “the way we think and act has a large impact on the environment.”

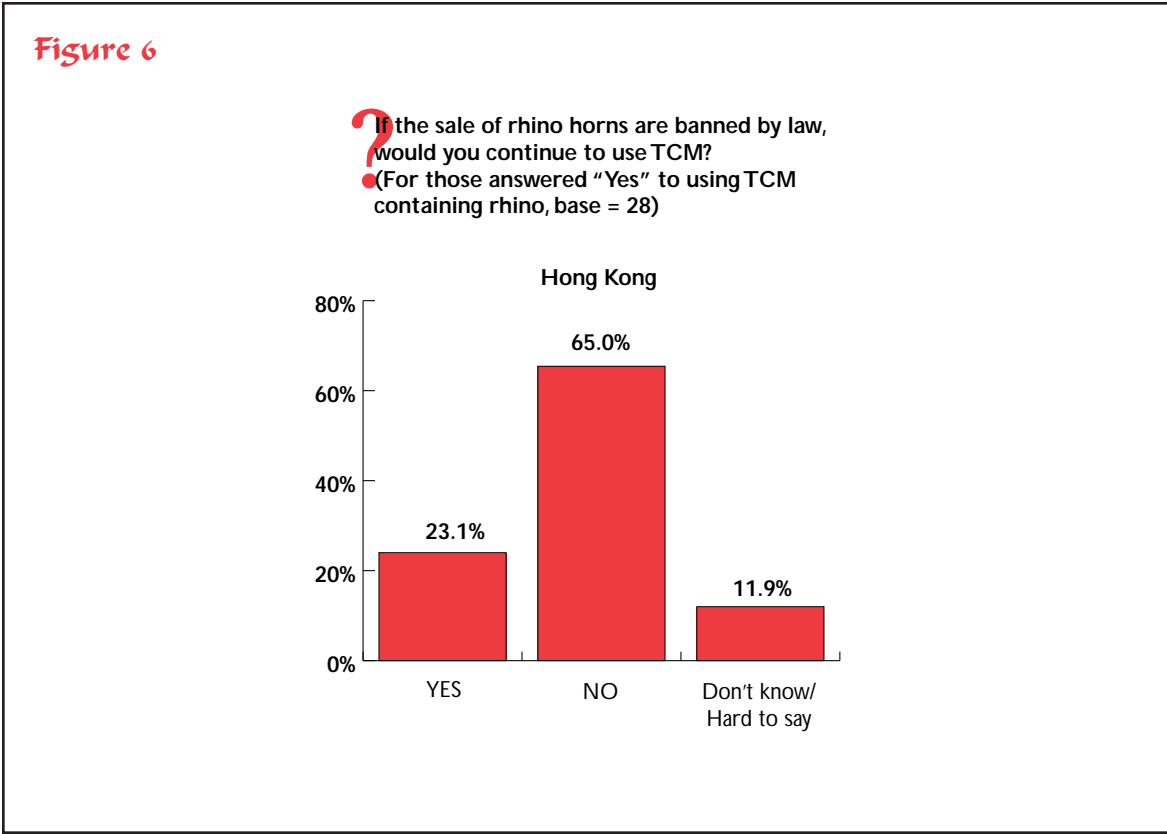
Figure 5

When asked to comment on a series of questions to determine general Hong Kong attitudes on wildlife, most respondents supported giving up some TCM to save species.



Nearly 70 percent of all Hong Kong respondents believed that their use of wild animals as food or medicine will pose threats to the natural ecology, while about 12 percent of respondents disagreed. The two statements “My use of wild animals as food or medicine poses threats to the natural ecology” and “Humans would be adversely affected if wild animals become extinct in the wild gradually” drew similar levels of support between TCM users and non-users. Among TCM users in general, 72 percent agreed, as did about 66 percent of nonusers.

The survey results show some support for the idea that food and medicine made from wild animals have more of a psychological than real effect. Overall, 41 percent of respondents agreed while 27 percent disagreed, and the remaining 33 percent had no position. Although support for this statement was roughly the same among TCM users and nonusers, there was substantial difference of opinion among TCM user groups (Figure 5).



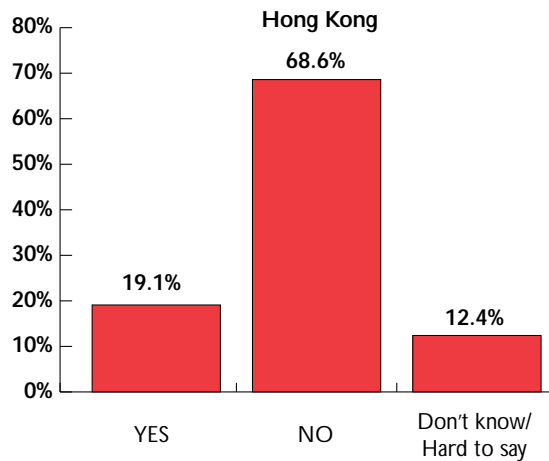
At one extreme, 54 percent of respondents who use TCM containing wild animals as ingredients disagreed with the statement, while 26 percent agreed. The situation was almost reversed among users of TCM without wild animals as ingredients, where 48 percent agreed while 24 percent disagreed.

Several questions related to the use of tiger bone and rhino horn were posed to respondents. Results show that of the 403 TCM users, only 28 (7 percent of all TCM users, 2 percent of the total sample) reported that they had previously used TCM containing rhino horn. Sixteen of these users (4 percent of all TCM users, 1 percent of total sample) reported having used tiger bone.

When asked whether they would continue to use such items if they were prohibited by law, 65 percent (18 respondents) of “rhino horn users” and 69 percent (11 respondents) of “tiger bone users” said that they would stop using those products (Figures 6 and 7).

Figure 7

? If the sale of tiger bones are banned by law, would you continue to use TCM?
• (For those answered “Yes” to using TCM containing tiger, base=16)



If informed that sale of those TCM containing rhino horn or tiger bone were banned by law, only 23 percent (6 respondents) of the “rhino horn users” and 19 percent (3 respondents) of “tiger bone users” would continue that use.

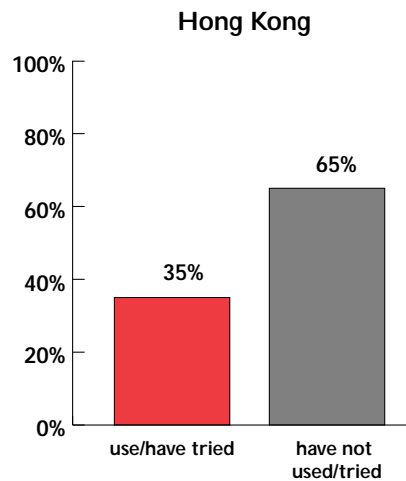
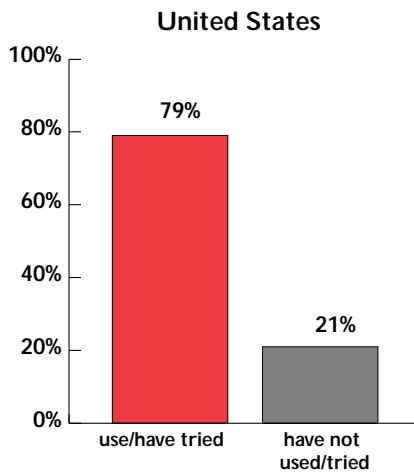
Among rhino horn and tiger bone users, male respondents were more likely to have consumed these items than women respondents, and older respondents were more likely than younger ones. It was not surprising that older respondents were more likely to have consumed TCM with derivatives of tiger, such as the bones, because it is used for the treatment of rheumatism.

This survey also found that more men than women would continue to consume TCM containing rhino horn or tiger bone, even with the knowledge that these TCMs are prohibited by law.

Figure 8

Some people use only western medicine to treat illness or maintain their health. Other people use alternative medicines, such as Chinese medicine to treat illnesses or to maintain their health. How about you, do you use Chinese medicine to treat illnesses or maintain your health? If NO, have you ever used Chinese medicine?

Have you ever taken or used externally TCM, like elk deer horn, musk deer, etcetera? (IF YES) How often?



U.S. ATTITUDES VERSUS THOSE IN HONG KONG

This section provides a detailed summary of the findings from the public opinion research conducted for TRAFFIC North America and WWF among Chinese-Americans on use of TCM and on attitudes toward endangered species and their use in TCM. Where appropriate, the U.S. survey results are compared to the Hong Kong data of TRAFFIC East Asia. In this section, those data are referred to as the “Hong Kong survey.”

In addition, responses of focus groups conducted in San Francisco are included, where appropriate, and are offset by quotation marks. All statistical data contained in this report are taken from the surveys. No quantitative results were generated from the focus groups and these are included for interest and further clarification of this discussion.

Use of TCM in the United States and Hong Kong

A majority of the Chinese-Americans surveyed have tried TCM, and most use such medicine on a regular basis. Nationally, more than three-quarters (79 percent) of Chinese living in the United States have used TCM at some time in the past, either to cure an illness or to maintain health. About half of Chinese-Americans (52 percent), and 65 percent of TCM users take TCM at least a few times a year, while only 20 percent (25 percent of TCM users) take TCM less than once a year. Nationally, nearly a fifth (17 percent) can be termed “frequent” users (once a month or more), while among those who use TCM, 21 percent take it once a month or more (Figure 8).

These results differ markedly from those found in the Hong Kong survey, which showed only 35 percent of Chinese adults reporting having used TCM. Only 7 percent of Hong Kong respondents reported monthly use, and 19 percent reported using TCM at least a few times a year. As one compares these results, however, it is important to note the difference in question wording between the two surveys. The Hong Kong survey included examples of specific types of TCM when asking about respondents’ use. The broader, more general nature of the U.S. survey question may account for the larger number of respondents saying they have tried TCM. The frequency of use reported may also differ because the Hong Kong question included a category of use defined as “yes, but not regularly,” which was not included in the U.S. questionnaire (Figure 9). Because this response could be interpreted differently by each respondent, and because this choice was selected by more respondents than any other response, it is difficult to gauge frequency of use from the Hong Kong question results.

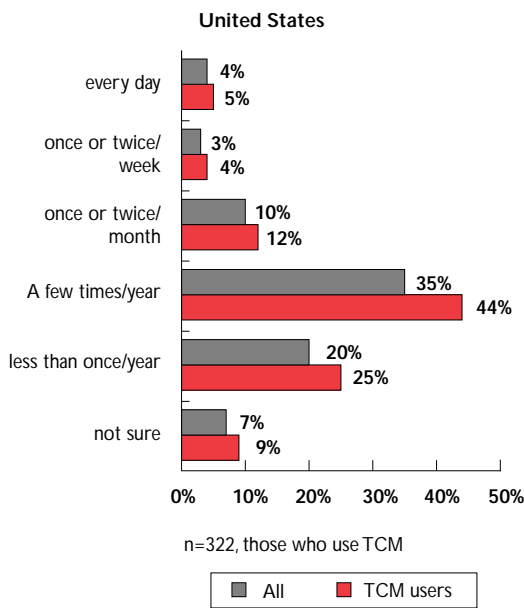
The demographics of TCM users in the United States mirror the demographics of Chinese-Americans. Chinese medicine users in the United States are somewhat more

likely to be born outside the United States and to be under 40 years old (Figure 10). The survey found that 58 percent of those who have used TCM are 40 years old and younger, compared to 24 percent who are between the ages of 40 and 60, and 17 percent who are 60 and older. Nearly three-quarters (73 percent) were born outside the United States. Of those, 49 percent are from China, 19 percent from Hong Kong, and 30 percent came from other Asian countries, though all were ethnic Chinese.

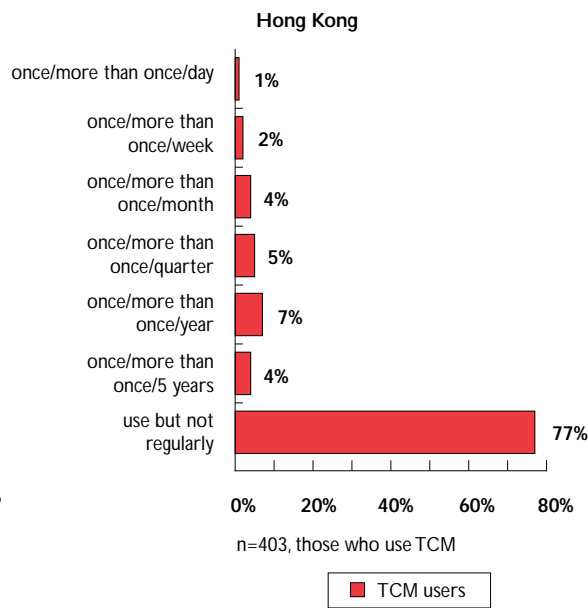
Among those born outside the United States, use is most common among those who have lived in the United States 10 to 20 years (32 percent). Those living in the United States between five and ten years (18 percent) are somewhat less likely to use TCM. More users of Chinese medicine live in the Western United States. Although slightly more than half of Chinese-Americans live in the Western United States (52 percent), 61 percent of TCM users live in this region. While 21 percent of Chinese-Americans live in the midwest and the south, only 14 percent of TCM users are found there. About a

Figure 9

How often would you say you use Chinese medicine treatments, everyday...less than once a year?



Have you ever taken or used externally TCM, like elk deer horn, musk deer, etcetera? (IF YES) How often?



quarter (24 percent) of TCM users live in the northeast, compared to 27 percent of the Chinese-American population (Figure 11).

Chinese medicine users tend to purchase both TCM that is prepackaged and TCM that is mixed by specialists. Forty-three percent said they purchase both types of TCM, while 26 percent purchase mostly prepackaged medicines, and 22 percent purchase medications mixed by specialists. More frequent users of TCM are more likely to purchase prepackaged medications. Among those who use TCM a few times a year, 31 percent use prepackaged medicines only, while 48 percent use a combination of pre-packaged and medicines mixed by specialists. Among those who use TCM once a month or more, 35 percent tend to purchase prepackaged medications (Figure 12).

Figure 10

TCM users in the United States are somewhat more likely to be born outside of the country.

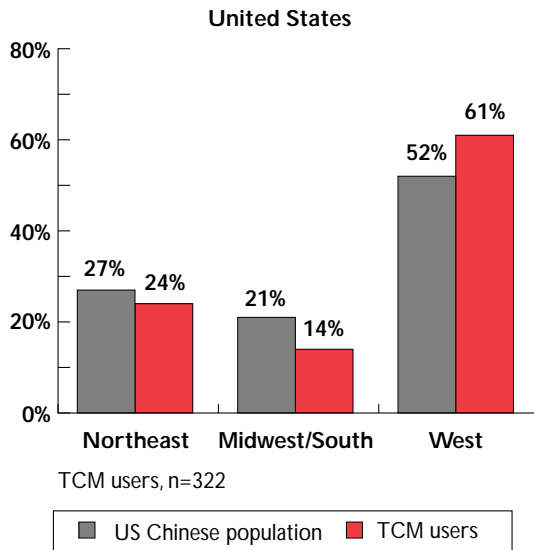
| | National Sample | Used TCM | Use TCM a few times/year or more |
|---------------------------------------|-----------------|----------|----------------------------------|
| are less than 30 | 31% | 33% | 36% |
| are 30 to 40 yrs old | 25% | 25% | 28% |
| are 40 to 50 yrs old | 14% | 14% | 14% |
| are 50 to 60 yrs old | 10% | 10% | 9% |
| are 60 and older | 19% | 17% | 13% |
| are high school graduate | 36% | 28% | 38% |
| are some college | 18% | 19% | 16% |
| are college graduate | 27% | 27% | 27% |
| are post graduate studies | 18% | 16% | 17% |
| have kids at home | 38% | 41% | 46% |
| speak Cantonese at home | 43% | 38% | 45% |
| speak Mandarin at home | 24% | 24% | 25% |
| speak English at home | 25% | 22% | 21% |
| U.S. born | 30% | 28% | 24% |
| were born outside U.S. | 70% | 73% | 76% |
| were born in China | 49% | 49% | 49% |
| were born in Hong Kong | 18% | 18% | 19% |
| were born in other Asian countries | 31% | 31% | 23% |
| have been in the U.S. less than 5 yrs | 26% | 26% | 26% |
| have been in the U.S. 5 to 50 yrs | 18% | 18% | 19% |
| have been in the U.S. 10 to 20 yrs | 32% | 32% | 34% |
| have been in the U.S. 20 or more yrs | 23% | 23% | 19% |

Chinese Medicine: Culture and Cure

TCM is highly regarded by Chinese-Americans both as effective medicine and as an important part of Chinese culture and tradition (Figure 13). Respondents were asked how well several words and phrases describe TCM. More than half (59 percent) said that “an important part of Chinese culture and tradition” describes TCM “very well.” Those who were born outside the United States were most likely to view TCM as important culturally, with 67 percent saying this phrase describes TCM “very well,” compared to 40 percent of those born in the United States. Among foreign-born Chinese-Americans, those respondents with shorter residency were more apt to view TCM as culturally important. Among those living in the U.S. 10 years or less, 73 percent said “an important part of Chinese culture and tradition” describes TCM “very well.” Of those living in the United States for 10 to 20 years, 65 percent said the same while 58 percent of those in the United States 20 years or more agreed.

Figure 11

About a quarter of TCM users in the United States live in the northeast.

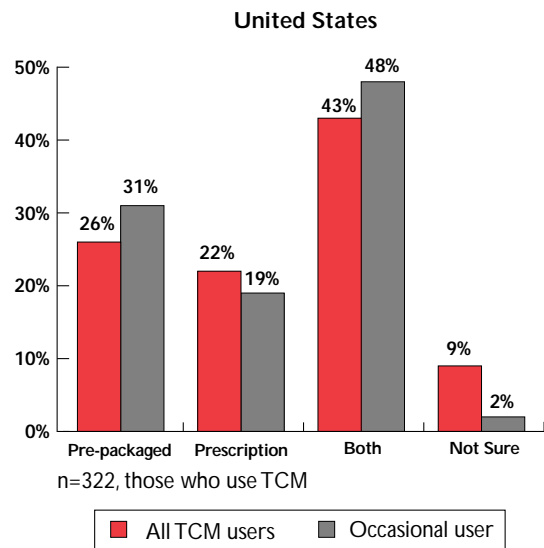


In addition, Chinese-Americans believe that TCM is medically effective. About one-third (38 percent) said “[TCM] has fewer side effects than Western medicine” describes TCM “very well,” while 21 percent said “effective” describes Chinese medicine “very well.” Respondents in the U.S. survey were somewhat less likely than Hong Kong Chinese to view TCM as much more effective than Western medicine. While the Hong Kong survey found that 80 percent believe TCM can “sometimes cure illnesses Western medicine cannot,” only 49 percent of Chinese-Americans responded that the phrase “can cure illnesses Western medicine cannot” describes TCM.

In the U.S. focus groups, participants described Chinese medicine as having fewer side effects and as being gentler, more complete cure for ailments than Western medicine. Many spoke of the harsh effects of Western medicine, specifically, its use of sedatives which sap their energy. “I think Chinese medicine is very good because Chinese medicine, mainly from Chinese medicine doctors, is a balance because many times it’s not just to cure the symptoms, it’s also to cure completely. And Western medicine—some-

Figure 12

Do you generally buy pre-packaged Chinese medicines, get a prescription from a Chinese doctor, or both?



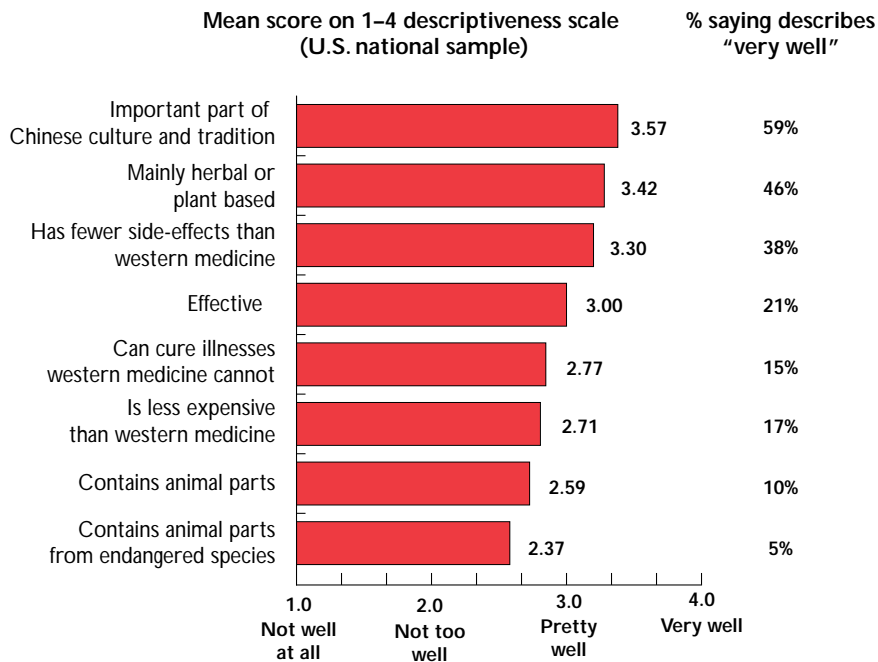
times the effect is too strong. If it cures one thing, then it will cause other problems to arise,” commented one participant. Said another, “Chinese medicine to cure a sore throat and also a cold ... won’t make you as tired as Western medicine.”

Many focus group discussants spoke of western medicine as the “quick-fix” treatment for an ailment or an emergency health problem, with Chinese medicine as the follow-up to ensure complete recovery. One participant described the approach this way—“If it’s an emergency, like a fever or sore throat, I take Western medicine more, but if it’s a cold or something that would not cause immediate danger, then I usually take Chinese medicine because Western medicine will cure your fever, then after[wards] you feel very weak. [With] Chinese medicine, the effect might be slower, but it won’t harm the body that much.”

Focus group participants who had been living in the United States longer spoke of the tension between the Chinese treatments they prefer and health insurance, which covers

Figure 13

TCM is highly regarded by Chinese-Americans as both effective and an important part of Chinese culture and tradition.



only Western-style treatment. “After I came here I [had] have no choice [but to see a Western doctor] because you need proof to give to the company for insurance purposes, so you go see a Western medicine doctor. So sometimes I go see a Western medicine doctor and afterwards I still go see a Chinese medicine doctor,” said one discussant. Another echoed the same sentiment, saying “If you see a chiropractor ... it takes a long time and it won’t be cured. And also, it’s a long period of time of treatment. So from an insurance point of view, like if you see an herbalist, [and] it’s just one or two times, it just costs several tens of dollars. A chiropractor costs several hundreds of dollars and still it’s not very effective. So if we work [and receive health insurance], this [lack of medical coverage for TCM] happens all the time.”

Little Knowledge of TCM’s Specific Ingredients

Despite wide experience with TCM, most survey respondents reported little or no knowledge of the specific ingredients used in TCM (Figure 14). As was found in the Hong Kong survey, in which half (53 percent) of TCM users reported that they would not try to learn the contents of the Chinese medicine they use, U.S. survey respondents reported little knowledge of the specific ingredients in TCM. Fully 71 percent said they do not know much about specific ingredients in TCM, and 37 percent said they know “nothing at all.” Only 5 percent reported knowing a “great deal,” and about a fifth (21 percent) said they have “some” knowledge of TCM’s specific ingredients. Even among those who use TCM, almost two-thirds reported knowing little to nothing about its ingredients (36 percent not too much, 29 percent nothing at all).

In the focus groups, participants explained that it is often difficult to evaluate the TCM they buy. Some participants rely heavily on brand name or the place of manufacture when it comes to evaluating the potential efficacy of Chinese medicine treatments. “I take a specific brand because I don’t know if the other one is fake or real,” said one participant. Agreed another, “I think it’s very important too, if it’s a famous brand like [example given], then you feel good immediately, but if you take other brands, then it won’t help.”

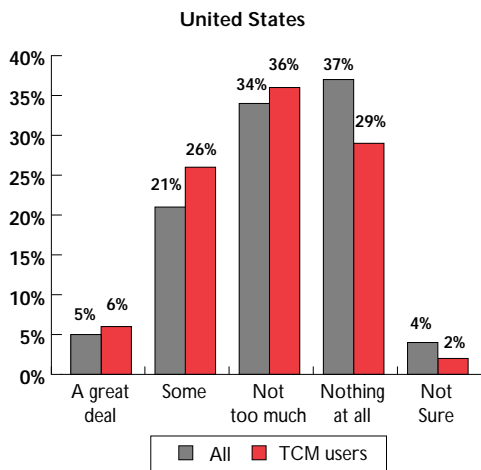
Others rely less heavily on brand names and just look to see what the medicine will cure before purchasing it. “I don’t think you pay attention to the brand name,” said one discussant, “You just go to an herbalist shop and you don’t know.” Some admit they have little knowledge about the specifics of the treatments they use. Explained one participant, “I would look, but even if I look, I don’t know what those things are because there are too many varieties in Chinese medicine. So the most common ones you would be familiar with and you would know, but there are many that are strange to you. It really doesn’t matter whether you look at them or not.”

While some are uncertain of the specific ingredients used in over-the-counter Chinese medicines, many have knowledge of and praise for specific treatments containing wildlife. Products such as crocodile meat, deer tail, and snake's gall bladder were given particular praise. Most discussants seemed familiar with the use of tiger bone and rhino horn, and several had tried products with tiger bone.

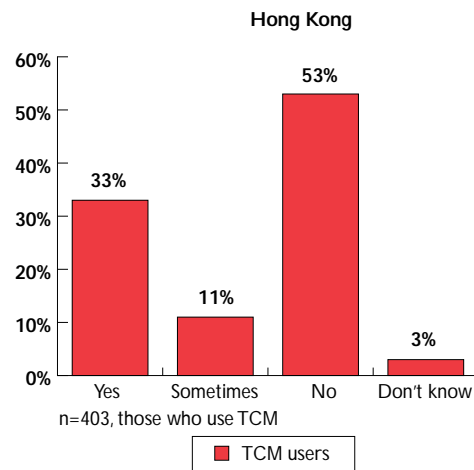
Many were quick to point out that animal parts are not frequently used in Chinese medicine and treatments tend to be composed of plants and herbs. "Things with animal parts—it is very seldom we take them. Usually we use medicine from plants," commented a discussant. In the survey, a majority of respondents said that Chinese medicine is mainly or solely plant- and herb-based (52 percent), while 15 percent believe it is both plant- and animal-based, and 33 percent were not sure. Very few respondents reported any personal use of animal-based TCM. A majority (71 percent) said the TCM they use personally is mainly herb and plant-based, while only 6 percent said they use animal-based TCM, and nearly a quarter (24 percent) were unable to say whether the TCM they use is mostly plant-based or animal-based (Figure 15).

Figure 14

How much would you say you know about the specific ingredients contained in Chinese medicinal treatments? Would you say you know a great deal...or nothing at all?



Would you try to understand the content of TCM before using them?



Little Awareness of TCM's Use of Endangered Species

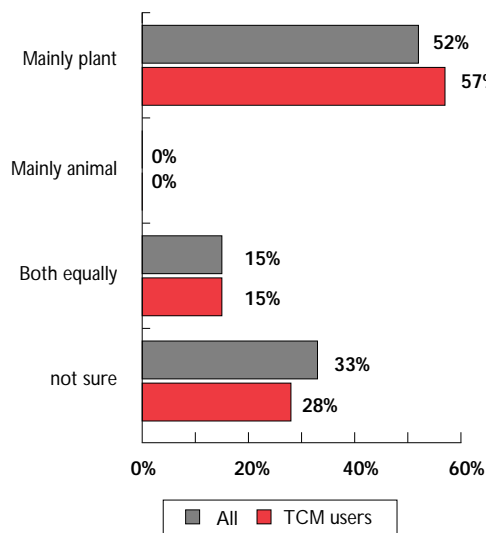
Most Chinese-Americans in the survey were familiar with the term “endangered species” and said that saving those species is important to them personally. At the same time, many had very little awareness of the use of endangered species in TCM. Indeed, TCM was not perceived as a significant threat to endangered species.

Fully 80 percent said they have heard the term “endangered species” and nearly the same number (77 percent) said that it is personally important to them to save these species (Figure 16). A great number (42 percent) said saving endangered species from extinction is “very important.” Concern for protecting endangered species was greatest among women respondents less than 45 years old (57 percent “very important”); college-educated respondents (52 percent); English-speaking respondents (57 percent), and those with incomes of US\$40,000 (HK\$309,000) and higher (58 percent).

Figure 15

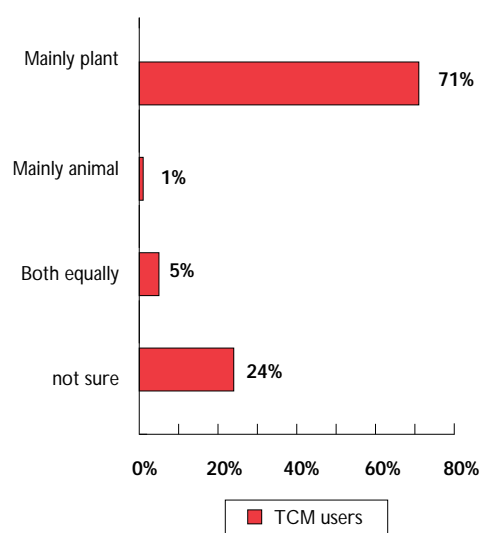
Would you say that Chinese medicine consists mainly of plants and herbal ingredients, mainly of wild animal ingredients, uses both equally, or aren't you sure about this?

United States



Would you say that the Chinese medicines you yourself use consist mainly of plants and herbal ingredients, mainly of wild animal ingredients, do the medicines you use contain both about?

Hong Kong



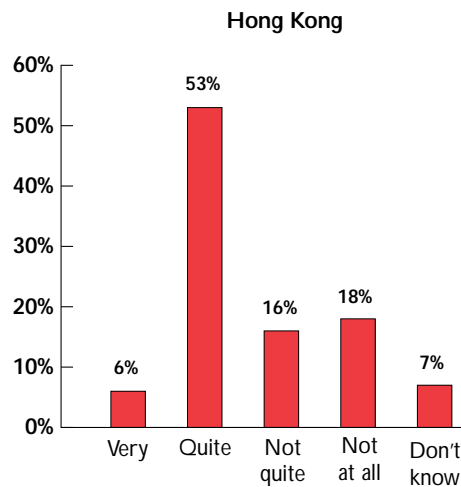
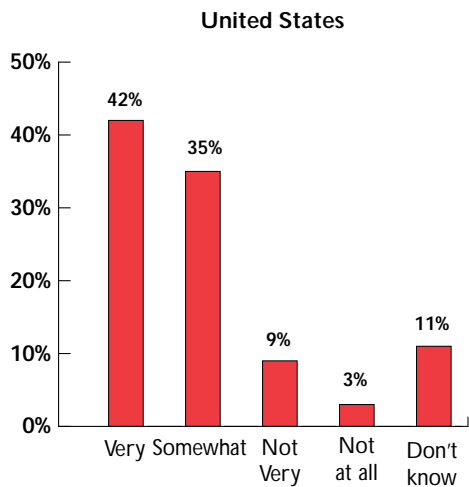
Similar to the Hong Kong study, which found 70 percent agreeing with the statement “human beings will be adversely affected if wild animals become extinct gradually,” 68 percent of Chinese-Americans agree (24 percent strongly agreed) with the statement that “human beings will be adversely affected if endangered species become extinct.” Agreement on the human need to protect endangered species was even higher when phrased as “human beings will be adversely affected if endangered species become extinct, because when we cause animals to go extinct, we are disrupting the balance of nature.” Fully 81 percent agreed with this notion, while 33 percent strongly agreed. There was also strong agreement on a moral compunction to protect species. Among Chinese-Americans, 88 percent agreed with the assertion that “human beings have a moral obligation to protect endangered species” (38 percent agreed strongly).

At the same time, many are unaware of TCM’s use of these animals. Few connect Chinese medicine with endangered species. While 44 percent said “contains animal parts” is descriptive of Chinese medicine (10 percent describes “very well”), 33 percent

Figure 16

? In your opinion, how important is it to you personally to save endangered species from extinction? Would you say it is very important, somewhat important, not very important, or not at all important?

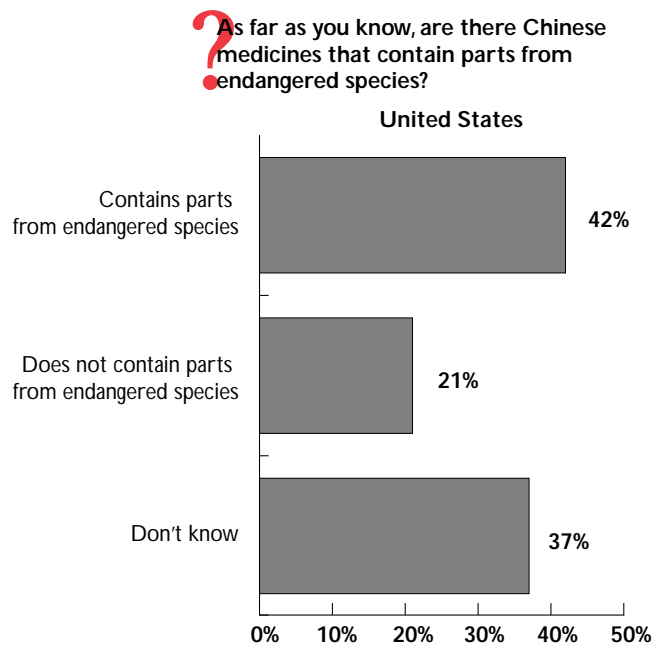
? Are you concerned about the issue of endangered species?



said “contains animal parts” is not descriptive of Chinese medicine, and 35 percent were not sure. Even fewer think of TCM in the context of endangered species. The number who said that “contains animal parts from endangered species” describes Chinese medicine was equal to the number who said this phrase does not describe TCM (32 percent), while 35 percent were not sure. When asked directly if some Chinese medicines contain parts from endangered species, about four in ten (42 percent) said that some Chinese medicines contain parts from endangered species, while about a fifth (21 percent) said that no Chinese medicines contain endangered species ingredients, and more than a third (37 percent) were not sure whether there are TCMs that use endangered species ingredients (Figure 17).

Awareness of TCM’s use of endangered species was highest among those respondents who use TCM more frequently (50 percent among those who use TCM a few times a year, 47 percent among those who use TCM once a month or more). There was also greater awareness of endangered species in TCM among men less than 45 years old (58

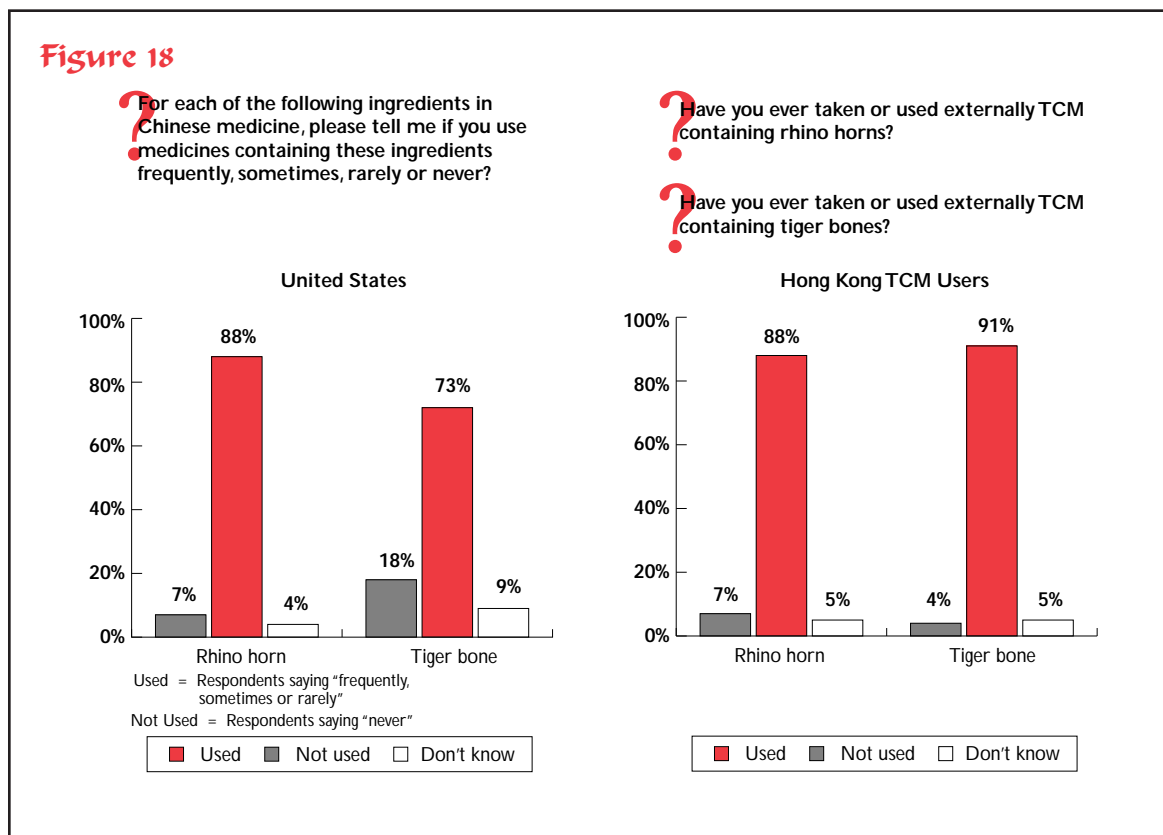
Figure 17



percent); college-educated (56 percent); those living in the United States less than 10 years (51 percent); and those with incomes above US\$40,000 (HK\$309,000) (60 percent). Those who were least aware of TCM's use of endangered species were women respondents 45 and older (29 percent say they do not use endangered species, compared to 21 percent of all age groups), 40 to 60 year-olds (28 percent), and those who were not born in the United States (28 percent).

Respondents reported very low levels of personal use of endangered species in TCM. Without being told the ingredients were from endangered or regulated species, respondents were asked how often, if ever, they use tiger bone, musk deer gland, bear gall bladder, and rhino horn.

Tiger bone was the endangered species most likely to have been used, with 18 percent of respondents saying they have used it (0 percent frequently; 9 percent sometimes; 9 percent rarely) (Figures 18 and 19).



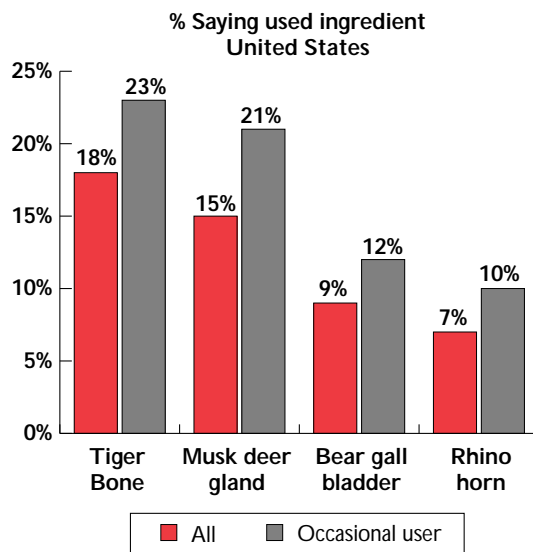
Musk deer gland was the next most commonly tried endangered species TCM, with 15 percent of respondents reporting having used it (1 percent frequently, 1 percent sometimes, 13 percent rarely).

Respondents had far less personal experience with bear gall bladder and rhino horn. Only 9 percent reported using bear gall bladder (0 percent frequently; 1 percent sometimes; 8 percent rarely).

While numbers for rhino horn use were similar to that reported by TCM users in Hong Kong (7 percent U.S.; 7 percent Hong Kong), Chinese-Americans are much more likely to have tried TCMs containing tiger bone (18 percent in the U.S., compared to 4 percent in Hong Kong).

Figure 19

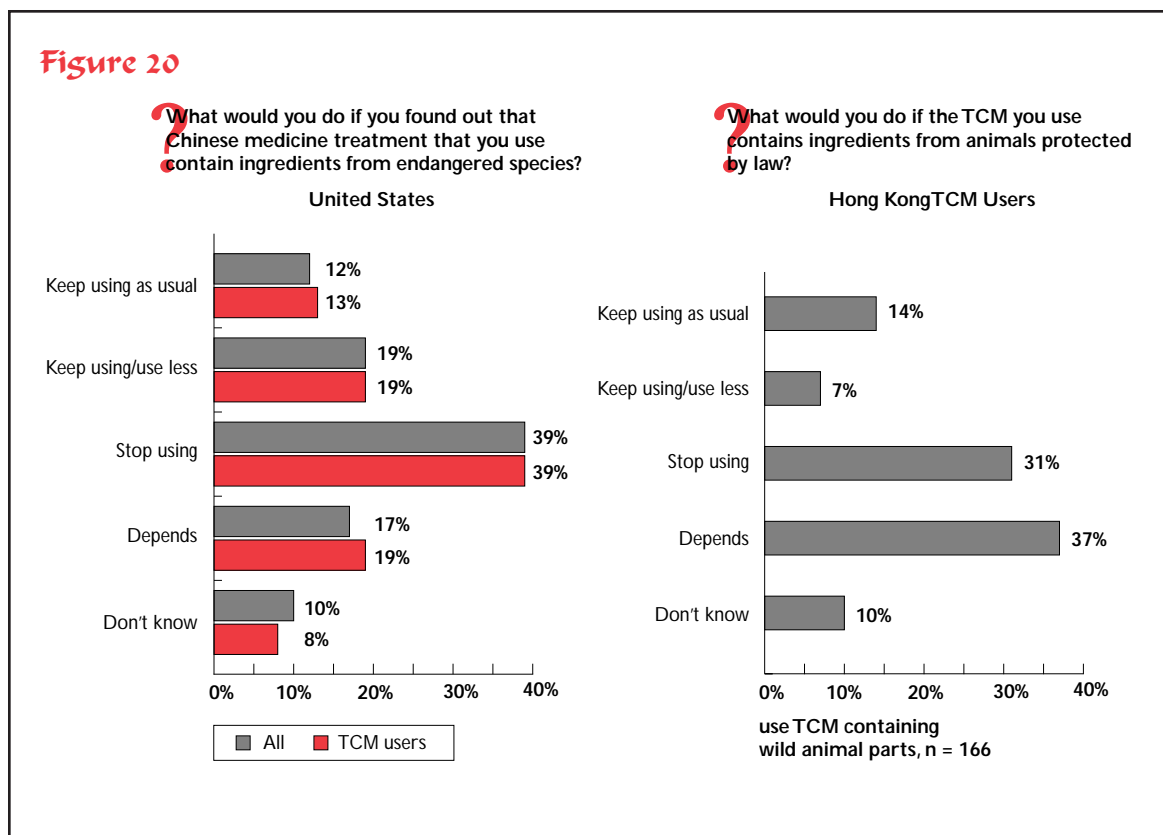
Tiger bone was the most likely endangered species part to have been used.



However, it is important to note that very few reported using TCM from these species frequently or even sometimes. Given that many were not aware of the ingredients of the TCM they use, awareness of use may lag far behind consumption.

TCM Not Considered A Significant Threat to Endangered Species

While most Chinese-Americans were willing to stop or reduce their use of TCM containing endangered species ingredients, few considered Chinese medicine to be a significant threat to those animals. Survey respondents were asked what they would do if they found out that a Chinese medicine treatment they used contains ingredients from endangered species. While a plurality of respondents said they would stop using the particular medicine (39 percent), 19 percent said they would continue to use the medicine but in smaller amounts, and another 12 percent said they would keep using the medicine as usual (Figure 20). Thus, 31 percent would continue to knowingly use TCM derived



from endangered species knowingly. More than a quarter of respondents were not sure what they would do—17 percent said it would depend on the specific situation, and 10 percent simply did not know what action they would take if they found out their TCM contained endangered species ingredients.

Those most willing to abandon TCM containing endangered species were respondents born in the United States (52 percent compared to 34 percent of foreign born); those who are college-educated (48 percent)—particularly college-educated women (55 percent); and those with a household income of US\$40,000 (HK\$309,000) and higher (50 percent). While the Hong Kong survey asked a similar question and found similar results, it is important to note that only those respondents in the Hong Kong survey who said they would use TCM containing wild animals parts were asked this question. The U.S. survey asked the question of all respondents. Thus, the results, although similar, are not statistically comparable.

U.S. respondents did not view use of TCM containing endangered species as inconsistent with having concern for saving these species. Indeed, a majority of those who would continue to use TCM after finding out it contained ingredients from endangered species believed saving those animals is important. Nearly two-thirds (63 percent) of those who would continue to use a TCM treatment containing endangered species as usual said that saving endangered species is personally important to them. Fully 80 percent who would curtail, but not stop their use of TCM with endangered species also said saving endangered species is personally important to them. Comments from the focus groups help to explain this apparent inconsistency.

In the focus group discussions, participants spoke of a trade-off when it comes to using medicines made with parts taken from endangered species. While none wanted to see those animals killed, many feel they have no choice. “Sometimes I am in a dilemma. Sometimes when I am sick, I need that and I want that medicine. But it’s an endangered species, so I am sad about it,” said one person. Most discussants resolve this perceived conflict between saving human life and endangered species in favor of saving human life. “If it is extinct, of course it is not good [to use that TCM]. But if you are sick, then you have to take it. There is nothing else you can say—there is no answer to that,” said one participant. Said another, “if it is really going to be extinct, I won’t use it unless I have to have it, and if I don’t have it, I’ll die.”

Still other focus group participants rejected the notion that the quantities of endangered species consumed in TCM pose a significant threat to these animals. Said one respondent, “China is a vast country and there are lots of Chinese, but it is not the majority ... People say [animals go extinct] because of the Chinese. It has nothing to do with us. We are just a minority that uses those things and so they blame it on us.” Asserted another, “I think the extinction of animals is very little from Chinese medicine because mostly we

take herbs. How many people think because they take Chinese medicine they kill all the animals? I think it is very unfair to say that.”

Indeed, the survey found that a significant number of Chinese-Americans view attempts to stop Chinese medicine’s use of endangered species as Western prejudice. Respondents were asked to choose between two statements. One statement read, “The use of endangered species is just one part of Chinese medicine, and there are usually only very tiny amounts of things like tiger bone and rhino horn used in treatments. Chinese medicine is not threatening endangered species. This argument is just Western prejudice against traditional Chinese culture and practice.” The other statement read, “Endangered species like tigers and rhinos are so close to becoming extinct that we must stop all human threats to these animals, including their use in Chinese medicine.” While a plurality (48 percent) of Chinese-Americans agreed that we need to stop all threats to endangered species, including the threat posed by their use in TCM, fully 30 percent agreed with the statement that the claim of Chinese medicine’s threat to endangered species is no more than Western prejudice.

Both long-time U.S. residents and newcomers argued that Chinese medicine is not a major threat to endangered species, particularly when compared to other human pressures on the environment. Newcomers in particular were not likely to see any threat to endangered species stemming from Chinese medicine and attributed such a claim to Western prejudice against Chinese cultural practices. The survey found that younger Chinese-Americans (44 percent); those living in San Francisco (41 percent), and those living in the United States less than 10 years (36 percent) were most likely to believe that labeling TCM as a threat to endangered species was prejudice.

Focus group discussions revealed a sense that the consumer is not the cause of the killing of those animals, adding to the belief that Chinese medicine has a minimal role in threatening endangered species. “The most important [thing] is you don’t kill the animals yourself. It has already been killed, so you just buy the product,” said one person. Argued another, “Even if you say a little bit of [threat] would be by Chinese medicine, it is because other people kill the animals and if you have the thing then you will use it.” They saw little or no connection between their personal consumption of such products and the market forces that drive poachers to kill. Explained one discussant, “I think killing the rhinos and tigers and using them in Chinese medicine are two different things. Because we [aren’t a significant factor in] how many are killed, we buy only a very small portion.”

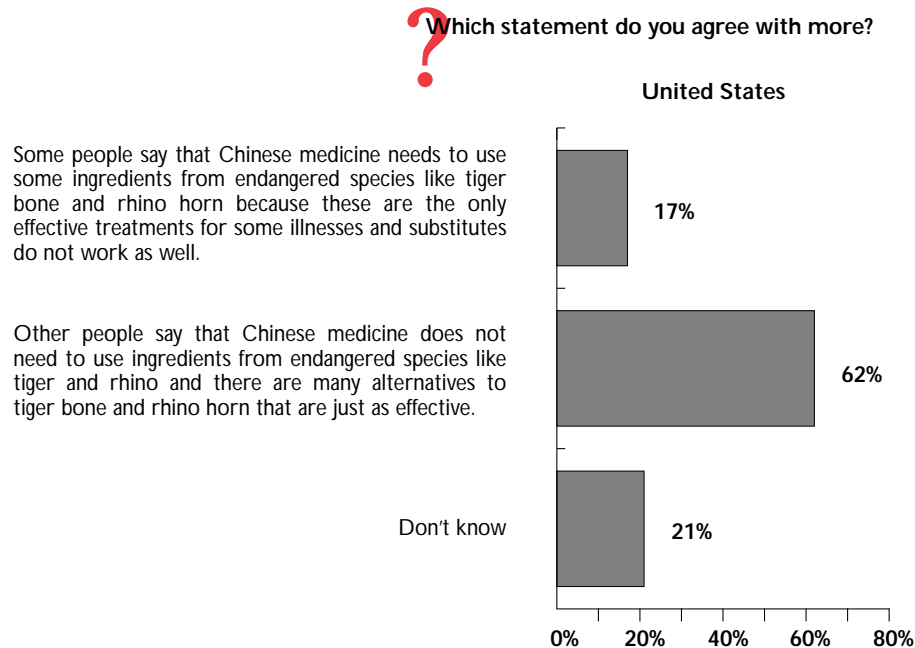
Alternative Ingredients Must Be Medically Effective

A majority of Chinese-Americans believed that TCM can find replacements for ingredients such as tiger bone and rhino horn. Fully 62 percent agreed with this statement, “Chinese medicine does not need to use ingredients from endangered species like tiger

and rhino, and there are many alternatives to tiger and rhino that are just as effective.” Only 17 percent held the view that “Chinese medicine needs to use some ingredients from endangered species like tiger bone and rhino horn because these are the only effective treatments for some illnesses, and substitutes do not work as well” (Figure 21).

Focus group participants eagerly offered the availability of alternatives as a solution to endangered species use in Chinese medicine. Said one respondent, “The medical field should study to use a certain medication to replace the animals. That would reduce the number of animals used.” Another respondent felt that alternative treatments were the obvious solution saying, “If something can replace it, of course you would try to find a replacement.” Willingness to use such replacements, however, was tempered by concern for their efficacy. Focus group discussants cautioned that any alternatives must be medically effective and not cause harmful side effects. “If there are chemical products or artificial products that are good for the body and there are no side effects, then of course we’ll

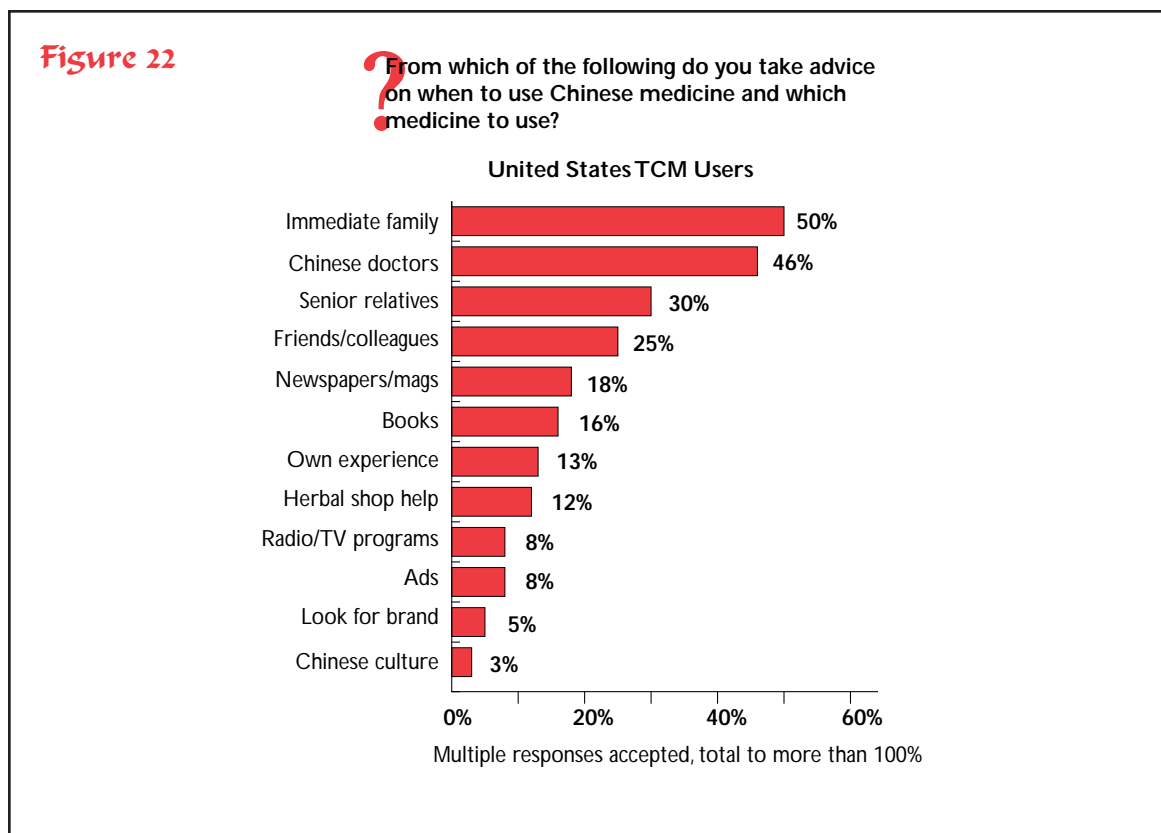
Figure 21



use that instead of the animals. But, they tell you there are no side effects and maybe eight to ten years later, they will tell you that there are side effects.” Said another discussant, “you talk about chemical [substitutes]” ... “[I will use it] if it’s an emergency situation and there are not side effects. If there are side effects, these are not that good of an idea.

Family Members and Chinese Doctors Most Frequently Consulted

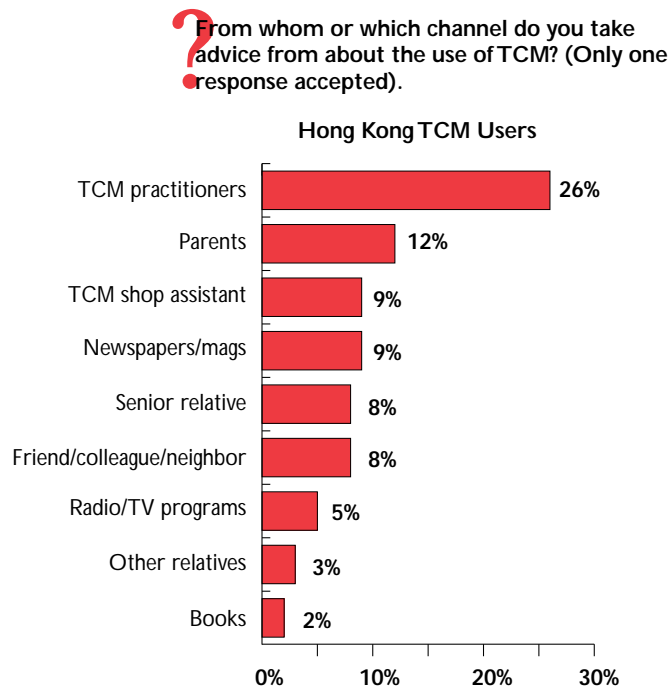
As was found in the Hong Kong survey, Chinese-Americans looked to Chinese doctors and family members as sources of advice on when to use TCM and which treatments to take. Among those who use TCM, half (50 percent) said they consult their immediate family members for advice on TCM, while 46 percent turn to Chinese doctors. Senior relatives (30 percent) and friends and colleagues (25 percent) formed the next largest reference groups (Figures 22 and 23).



Consistent with the Hong Kong survey, mass media were far less likely to be consulted. Only 18 percent said they look to newspapers and magazines for advice on TCM use, while 8 percent said they turn to television or radio programming and another 8 percent to advertisements when they need advice on which TCM to use.

Those born in the United States were more likely to turn to immediate family members (55 percent) than those born outside the United States (36 percent), while those who are foreign born were much more likely to seek advice from Chinese doctors (43 percent compared to 25 percent of those who are U.S. born).

Figure 23



THESE ATTITUDES ARE NOT REALLY A WORLD APART

Although TCM plays a substantial role in the health care of Chinese in Hong Kong and the United States, its use differs greatly. Far more Chinese-Americans (79 percent) than Hong Kong Chinese (35 percent) have used TCM. Likewise, Chinese-Americans use TCM more frequently. However, such results may differ in part due to the difference in survey questions asked.

Hong Kong Chinese rely most often on practitioners for TCM advice, while Chinese-Americans rely primarily on family members and then on practitioners. Both Hong Kong Chinese and Chinese-Americans have little knowledge of the ingredients in the TCM they use, and they have little interest in obtaining that knowledge before using such products.

Although both groups show great concern for the plight of endangered species, most Chinese-Americans and Hong Kong Chinese do not see a connection between use of TCM containing endangered species and the decline in those species. Both groups show a willingness to stop using or to decrease their use of TCM containing species protected by law, though many say it depends on the situation.

Only 7 percent of Chinese-Americans and Hong Kong Chinese who are TCM users say they have used TCM containing rhino horn, while nearly five times as many Chinese-Americans (18 percent) have used TCM containing tiger bone as have Hong Kong Chinese TCM users (4 percent).

Hong Kong

TCM continues to play a substantial role in health care in Hong Kong. TCM users (one third of Hong Kong's Chinese population), seek medicinal advice most often from practitioners and shop assistants. Most TCM users aren't aware of, and don't try to learn, the ingredients in the medicines they use. Most users would avoid using TCM containing wild animal parts, and a few would pay more for such TCM than for TCM containing derivatives from animals bred in captivity.

TCM users show more concern toward endangered species and wildlife conservation than nonusers, and most are willing to give up certain TCM to help save wildlife from extinction. Users of TCM containing wild animal parts are less likely to see such use as affecting the natural ecology than other TCM users or nonusers. Most TCM users believe that humans would suffer from the loss of these species. Despite such concerns, 36 percent of TCM users might continue to use TCM containing parts from endangered species protected by law, especially as a last resort.

Though very few respondents knowingly use tiger bone or rhino horn, and most would discontinue use if they knew such use was prohibited by law, some would continue such use. It is important to note that use of tiger bone and rhino horn medicines is prohibited in Hong Kong.

The United States

TCM plays an important role in the lives and culture of many Chinese-Americans, yet there is little knowledge of the specific ingredients used in TCM and, in particular, little awareness of the threat posed to endangered species by their use in TCM. Despite concern for endangered species, many would continue to use TCM containing parts from endangered animals if they perceive that the medicine is necessary and that there is no alternative. Chinese-Americans report low levels of personal use of tiger bone and rhino horn, but consumption of these TCMS may occur without users' knowledge.

Concern for protecting endangered species is high, and Chinese-Americans believe the destruction of these species will have important repercussions for human beings. Yet, many resist the notion that TCM represents a significant threat to endangered species. It will be important to avoid singling out the Chinese as part of efforts to stop endangered species use in TCM. Most are willing to use medically effective alternatives in order to end the use of endangered species in TCM.

THE NEXT STEP: RECOMMENDATIONS FOR COOPERATION

Recommended Actions for Hong Kong

1. *Influencing the Influential and the End User*

Because TCM practitioners and shop assistants have great influence over the choices made by TCM users, and because most TCM users do not attempt to learn the content of TCM prescribed to them, outreach and education efforts should be geared, as a matter of priority, toward the members of the TCM community in Hong Kong. Their support and contribution to such efforts will be critical to successfully educating and informing TCM users, as well as in prescribing medicines that do not contain endangered species.

While a significant minority of TCM users may continue to use TCM containing endangered species ingredients, most respondents would discontinue or limit such use once informed that these species are legally protected or are threatened with extinction. This finding suggests that if TCM users are informed about the issue, a considerable number of them would decide to cease their use of endangered animals as TCM.

Interested government agencies, nongovernmental organizations, and traditional medicine communities should work together to initiate new outreach and education efforts. Such efforts should be conducted in a language understood by key audiences—consumers and, where deemed important, the TCM industry including shop owners, practitioners, academics, and pharmacists. These efforts should focus on the following:

1. create an awareness of the plight of endangered species,
2. establish a causal link between the decline of some endangered species and their use in TCM,
3. highlight effective and sustainable alternatives to these medicines,
4. ensure that the message is not solely pointed at TCM use, thus further vilanizing TCM users. Instead, the message should make clear that TCM is only one element in a larger problem of habitat loss, human encroachment, poaching, and so on.

2. *Encouraging the Use of Substitutes and Alternatives*

The Hong Kong Special Administrative Region (SAR) Government and Hong Kong's TCM practitioners and shopkeepers should encourage the research, development, and use of effective and sustainable alternatives to medicines containing derivatives of threatened wildlife, especially with regard to those substances banned from international trade, such as tiger bone and rhino horn. Efforts should be made to make the public aware of these substitutes and alternatives. Meanwhile, the captive breeding and artificial propagation of some medicinal species should be assessed for their viability and sustainability.

3. *Regulating the TCM Industry*

Given that the practice and use of TCM in Hong Kong is not currently regulated, it is imperative that the Hong Kong SAR Government consider the issue of endangered medicinal species in formulation of the regulatory system now under consideration. Mechanisms should be built into that system to incorporate wildlife conservation concerns into basic training and also provide for professional censure for licensed TCM practitioners trading illegally in medicinal wildlife or medicines containing wild species, on top of existing legal responsibility.

4. *Continuing Law Enforcement Vigilance*

Hong Kong has some of the strictest laws and highest penalties aimed at stopping trade in rhino horn, tiger bone, and their medicinal derivatives. However, it is important that the Hong Kong SAR Government continue its vigilance in enforcing these laws and in handing down penalties large enough to dissuade trade in these products. In addition, the government should enhance its efforts to inform the general Hong Kong public of the illegality of the use of medicines containing rhino horn or tiger bone, as well as the reasons for these prohibitions.

Recommended Actions for the United States

1. *Influencing the Influential*

The respondents to the U.S. survey highlighted the importance to them of the professional TCM community in their selection of medicines and treatment. As a result, the long-term support and contribution of the professional TCM community in outreach efforts must be solicited and encouraged by the U.S. Government and conservationists.

Just as suggested for Hong Kong, U.S. Government agencies, nongovernmental organizations, and traditional medicine communities and practitioners should work together to initiate and sustain outreach and educational efforts in key consumer areas. Such efforts should be conducted in a language understood by key audiences—consumers and, where deemed important, the TCM industry including shop owners, practitioners, academics, and pharmacists. These efforts should focus on the following:

1. create awareness of the plight of endangered species;
2. establish a causal link between the decline of some endangered species and their use in TCM;
3. highlight effective and sustainable alternatives to these medicines;
4. ensure that the message is not solely pointed at TCM use, thus further vilanizing TCM users. Instead, the message should make clear that TCM is only one element in a larger problem of habitat loss, human encroachment, poaching, and so on.

2. *Highlighting Alternative Medicines already Available.*

U.S. law enforcement interceptions at U.S. borders (Anon. 1995, Anon. 1996) strongly suggest that there may be some residual demand for raw rhino and tiger products in the United States in spite of a more than 20-year import ban. However, it is clear from TRAFFIC North America's investigation (Gaski 1998) that the larger market and perhaps greater demand in the United States is for manufactured medicines containing or purporting to contain rhino horn and tiger bone. The market availability of these raw and manufactured products can be addressed by stronger enforcement of existing laws.

The U.S. survey clearly indicated that alternatives and substitutes would be acceptable if they were equal in efficacy to prohibited endangered species products and were recommended by a person whom the user trusts. As a result, the professional TCM community, which has studied and dispensed these alternatives, needs to provide information about alternatives to consumers and sellers of manufactured medicines. This intervention on the part of TCM professionals is particularly necessary because most Chinese-Americans receive advice on TCM from family members who may not be as current on such information as are practitioners and pharmacists.

Indeed, efforts by the TCM professional community to do just this seem already to be under way. Undoubtedly because of lack of a legal availability of prohibited species ingredients, TCM practitioners, pharmacists, and shop owners may already be recommending or suggesting alternative formulations and substitute ingredients that they know to be medically efficacious either through their personal experience, or their general clinical knowledge, or because they have seen listings in TCM materia medica. In addition, TRAFFIC North America found that, in some instances, shop clerks were offering customers either prepackaged manufactured TCM that do not contain derivatives from prohibited species or prepackaged manufactured TCMs with modified formulations that no longer contain these derivatives (Gaski 1998).

Working in conjunction with the TCM professional community, conservationists and governmental officials should contribute to a regularly updated list of available, legal, and efficacious alternative ingredients in traditional formulations and manufactured medicines.

3. *Enlisting Local Communities*

WWF has already initiated a cooperative working agreement with the American College of Traditional Chinese Medicine (ACTCM), which is one of the oldest colleges of TCM in the United States and is located in San Francisco. A June 1998 community workshop, sponsored by ACTCM, WWF in the United States, and the National Fish and Wildlife Foundation's "Save the Tiger" Fund, was convened for TCM professionals, local business people, educators, and other interested conservationists from San Francisco's local Chinese-American community and focused on tiger and rhino conservation. The facilitated discussions at the meeting resulted in an array of creative solutions to address the

tiger and rhino conservation problems on a local community level. Post workshop groups were organized to develop workable and practical ways to implement these solutions in the community.

ACTCM and WWF hope that this pilot project, once completed, will provide guidance for similar initiatives in other parts of North America. Another TRAFFIC/WWF survey will be conducted at the conclusion of the pilot project to determine the impact of the cooperative effort on Chinese-Americans in San Francisco.

In the interim, other conservationists and communities throughout North America can, indeed should, become endangered species advocates and should address impacts on endangered species through their own community-based approaches and by using the results of these surveys and the preliminary work of ACTCM and WWF.

4. *Targeting Outreach to All Stakeholders*

It seems apparent that Chinese communities—whether in the United States or in Hong Kong—have similar needs and attitudes about endangered species and TCM. So TRAFFIC and WWF believe that information learned about the attitudes of Chinese in Hong Kong and Chinese in the United States, as summarized and discussed in this report, apply also to Chinese living in Europe, Chinese living in Oceania and could also apply to Chinese living in Southeast Asia and Chinese living in other regions and countries. TRAFFIC and WWF encourage other nongovernmental and governmental organizations in other countries and regions to build upon this information and begin to develop appropriate outreach initiatives in tiger and rhino consuming and exporting countries.

But follow-up to or use of this survey is only the first of many steps that conservationists and governments need to take. Many other human stakeholders are involved in or affected by poaching and illegal trade problems, and along with conservationists, these stakeholders need to be identified in order to work cooperatively to alleviate the impacts on tiger and rhino populations. For example, more information needs to be compiled and made available about the attitudes of local communities surrounding tiger and rhino habitats and about incorporating the needs of these communities into any conservation initiatives. Law enforcement efforts will not be effective without the assistance and support of the local community. And while it has been assumed that once international demand is eliminated, poaching will stop, some tiger and rhino populations cannot afford to wait and see if that occurs. So the motivation of poachers of these animals in their range countries needs to be quantified to contribute to the development of and to assess the targeting of antipoaching efforts.

5. *Tightening U.S. Legal Loopholes*

The U.S. government should actively implement the 1998 Rhino and Tiger Product Labeling Act, which prohibits the import, export, and sale of products containing or purporting to contain tiger or rhino products. Accordingly, the U.S. Fish and Wildlife Service should develop a national strategy to ensure full enforcement of the law, and to gather and disseminate intelligence and information on source or stockpiling countries, other markets, and the legal status of domestically held supplies of such products.

As the United States has been seen as a major market for these illegal endangered species and there is speculation that illegal stockpiles of manufactured medicines may exist within the country (Gaski 1998), the United States has also an obligation to CITES to devote additional resources to such wildlife trade controls.

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APPENDIX 1

HONG KONG SURVEY

(Translated from Chinese)

“Greetings. I’m calling from the Social Science Research Centre of the University of Hong Kong. We are conducting a survey with TRAFFIC East Asia. The purpose of such a survey is to collect information about the public opinions on traditional Chinese medicine and wild animals. It will take you only a few minutes and all the information provided to us will be kept in confidence.”

Part 1: Introduction

Q1. Telephone no.

Q2. Interviewer no.

Q3. Which district do you live in?

- Wanchai
- Eastern District
- Central & Western District
- Southern District
- Kwun Tong
- Kowloon City
- Wong Tai Sin
- Mongkok
- Sham Shui Po
- Yau Tsim
- Sai Kung
- Sha Tin
- Islands
- Tsuen Wan
- Kwai Tsing
- Tuen Mun
- Yuen Long
- North District
- Tai Po
- Refused to answer

Q4. Household size.

Part 2: Select and identify respondents

Q5. Is there any person aged 18 or above in your home? For the purpose of random sampling, please ask the one with next birthday to answer this questionnaire.

- Yes
- No (Skip to end)
- Depreciation

Part 3: Core questions.

Q6. Have you ever taken or used TCM externally, such as elk deer horn, musk, etc. (If yes, how often)?

| | <u>Percentage of Responses</u> |
|---|--------------------------------|
| Once or more than once a day | 0.5 |
| Once or more than once a week | 0.7 |
| Once or more than once a month | 1.3 |
| Once or more than once a quarter | 1.7 |
| Once or more than once a year | 2.6 |
| Once or more than once every five years | 1.5 |
| Yes, but not regularly | 26.7 |
| Never | 64.6 |
| Don't know what TCM is | 0.2 |
| Not sure | 0.3 |

Q7. (For TCM users only) Would you take TCM that contains wild animal parts as ingredients?

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Yes | 20.3 |
| No | 58.6 |
| Depends | 12.9 |
| Don't know/hard to say | 8.1 |

Q8. (For users of TCM containing wild animal parts) Why would you take them?
(Multiple response, all choices allowed)

| | <u>Percentage of Responses</u> |
|---|--------------------------------|
| TCM is more effective than Western medicine | 17.2 |
| My illness requires such medicine | 13.0 |
| Because I am sick | 9.6 |
| Recommended by family members/friends | 16.1 |
| Prescribed by TCM practitioner | 13.1 |
| TCM is the Chinese tradition | 7.3 |
| TCM does not have side effects | 5.3 |
| I don't want to change my habits | 3.9 |
| I use TCM only | 1.0 |
| Other reasons | 11.4 |
| Don't know/hard to say | 2.2 |

Q9. (For TCM users who would not use TCM containing wild animal parts) Why would you not take them? (Multiple response, all choices allowed)

| | <u>Percentage of Responses</u> |
|-------------------------------|--------------------------------|
| No need to use them | 11.1 |
| They are not effective | 5.1 |
| TCM practitioner says not to | 4.7 |
| Wildlife would become extinct | 11.2 |
| It's too cruel | 2.3 |
| Prohibited by law | 9.8 |
| Not available in the market | 2.7 |
| I am a vegetarian | 2.5 |
| Afraid of bacteria | 2.4 |
| Not my practice | 2.2 |
| Too expensive | 1.6 |
| Not knowledgeable enough | 1.5 |
| Others | 12.1 |
| Don't know/hard to say | 31.0 |

Q10. (For all TCM users, base = 403) From whom or which source do you take advice about the use of TCM?

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| TCM practitioners | 26.3 |
| TCM shop assistants | 9.3 |
| Parents | 12.4 |
| Children | 0.3 |
| Siblings | 0.5 |
| Senior relatives | 8.4 |
| Relatives | 2.6 |
| Neighbors | 1.2 |
| Colleagues | 0.7 |
| Friends | 6.2 |
| Books | 2.4 |
| TV, radio | 5.4 |
| Newspaper, magazine | 9.3 |
| Others | 4.3 |
| Not regular | 3.4 |
| Don't know/hard to say | 7.4 |

Q11. (For all TCM users, base = 403) Do you try to familiarize yourself with the contents of TCMs before using them?

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Yes | 33.6 |
| Sometimes | 10.7 |
| No | 52.6 |
| Don't know/hard to say | 3.1 |

Q12. (For TCM users who might use TCM containing wild animal parts (i.e., excluding those who answered "No" in Q7, base = 166) What would you do if the TCM you use was known to contain ingredients derived from animals protected by law?

| | <u>Percentage of Responses</u> | |
|--------------------------|--------------------------------|-----------------------|
| | <u>All</u> | <u>TCM users Only</u> |
| | (Base = 403) | |
| Keep on using as usual | 14.2 | 6.0 |
| Use less | 7.0 | 3.0 |
| Stop using immediately | 30.8 | 12.7 |
| Depends on the situation | 36.7 | 15.1 |
| Others | 1.2 | 0.5 |
| Don't know/hard to say | 10.1 | 4.2 |

- Q13.** (For TCM users who might use TCM containing wild animal parts from species protected by law, that is, excluding those who answered “No” in Q7, and those who answered “stop using immediately” in Q12, base = 115) Under what circumstances would you use such TCM? (Multiple response, all choices allowed)

| | Percentage of Responses | | |
|--|---------------------------|---------------------|---------------------------|
| | Responses (Base = 135) | All (Base = 115) | TCM users (Base = 403) |
| In case of extreme illness | 22.2 | 26.1 | 7.4 |
| When Western medicine failed | 19.0 | 22.6 | 6.5 |
| Prescribed by TCM practitioner | 23.8 | 27.8 | 7.9 |
| Recommended by family members/friends | 11.2 | 13.0 | 3.7 |
| If I had the opportunity | 11.0 | 13.0 | 3.7 |
| If the price is reasonable | 2.3 | 2.6 | 0.7 |
| Others | 5.4 | 6.1 | 0.2 |
| Hard to say | 5.1 | 6.1 | 0.2 |

- Q14.** (For all TCM users, base = 403) Do you agree that TCM can sometimes treat sickness that cannot be treated by Western medicine?

| | Percentage of Responses |
|------------------------|-------------------------|
| Agree | 79.5 |
| Disagree | 5.6 |
| Don't know/hard to say | 14.9 |

- Q15.** (For all TCM users, base=403) Would you pay more for TCM containing ingredients derived from animals caught in the wild than for that containing parts of animals bred in captivity?

| | Percentage of Responses |
|------------------------|-------------------------|
| Yes | 14.3 |
| No | 63.6 |
| Not sure | 16.9 |
| Don't know/hard to say | 5.3 |

- Q16.** (For all TCM users, base = 403) Do you support laws that prohibit the use of endangered species in TCM?

| | Percentage of Responses |
|------------------------|-------------------------|
| Yes | 74.4 |
| Neutral | 10.2 |
| No | 6.5 |
| Don't know/hard to say | 8.9 |

Q17. (For all TCM users, base = 403) Have you ever taken or used TCM externally containing rhino horns?

| | <u>Percentage of Responses</u> |
|----------------------|--------------------------------|
| Yes | 6.9 |
| No | 88.4 |
| Don't know/forgotten | 4.7 |

Q18. (For those answering "Yes" in Q17, base = 28) If the sale of rhino horns were banned by law, would you continue to use those TCM?

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Yes | 23.1 |
| No | 65.0 |
| Don't know/hard to say | 11.9 |

Q19. (For all TCM users, base = 403) Have you ever taken or used TCM externally containing tiger bones?

| | <u>Percentage of Responses</u> |
|----------------------|--------------------------------|
| Yes | 4.1 |
| No | 91.2 |
| Don't know/forgotten | 4.8 |

Q20. (For those answering "Yes" in Q19, base = 16) If the sale of tiger bones were banned by law, would you continue to use those TCM?

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Yes | 19.1 |
| No | 68.6 |
| Don't know/hard to say | 12.4 |

Q21. Are you concerned about the issue of endangered species?

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Very concerned | 6.2 |
| Quite concerned | 52.7 |
| Not very concerned | 15.7 |
| Not concerned at all | 18.0 |
| Don't know/hard to say | 7.4 |

Q22. Humans should stop using some TCM in order to help save endangered animals.

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Strongly agree | 6.6 |
| Agree | 69.9 |
| Neutral/noncommittal | 10.2 |
| Disagree | 5.1 |
| Strongly disagree | 0.3 |
| Don't know/hard to say | 7.9 |

Q23. Humans will be adversely affected if wild animals gradually become extinct.

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Strongly agree | 4.3 |
| Agree | 63.2 |
| Neutral/noncommittal | 9.1 |
| Disagree | 12.4 |
| Strongly disagree | 0.3 |
| Don't know/hard to say | 10.6 |

Q24. My use of wild animals as food or medicine will pose a threat to the ecology.

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Strongly agree | 5.4 |
| Agree | 63.6 |
| Neutral/noncommittal | 8.6 |
| Disagree | 11.1 |
| Strongly disagree | 0.5 |
| Don't know/hard to say | 10.8 |

Q25. Food and medicine made from wild animals have more of a psychological than a real effect.

| | <u>Percentage of Responses</u> |
|------------------------|--------------------------------|
| Strongly agree | 3.0 |
| Agree | 37.9 |
| Neutral/noncommittal | 14.0 |
| Disagree | 24.6 |
| Strongly disagree | 1.9 |
| Don't know/hard to say | 18.8 |

Note: Questions 26 to 32 are about consumption of exotic wild animal as food and are not included in this report.

Q33. Gender.

| | Percentage of Responses | |
|---------|--------------------------------|-------------|
| Gender: | Male 50.0 | Female 50.0 |

Q34. Age (99 = Refused to answer)

| | Percentage of Responses | |
|-------------|--------------------------------|--|
| 18-20 | 11.8 | |
| 21-29 | 19.4 | |
| 30-39 | 30.0 | |
| 40-49 | 17.7 | |
| 50-59 | 8.5 | |
| 60 or above | 12.6 | |

Q35. Have you ever received education outside Asia?

| | Percentage of Responses | |
|-----|--------------------------------|--|
| Yes | 7.0 | |
| No | 93.0 | |

Q36. Education level.

| | Percentage of Responses | |
|-------------------|--------------------------------|--|
| Primary and below | 22.0 | |
| Secondary | 59.8 | |
| Post-secondary | 18.2 | |

Q37. Housing.

| | Percentage of Responses | |
|-----------------------|--------------------------------|--|
| Public housing | 39.2 | |
| Home Ownership Scheme | 15.0 | |
| Private housing | 41.3 | |
| Village | 2.2 | |
| Others | 2.3 | |

Q38. Occupation.

| | <u>Percentage of Responses</u> |
|----------------------------------|--------------------------------|
| Professional & semi-professional | 17.4 |
| Clerical & service workers | 23.8 |
| Production workers | 14.7 |
| Students | 10.4 |
| Housewives | 17.5 |
| Others | 16.2 |

Q39. Average personal monthly income (0=No income; 99 998 = Not regular; 99 999=Refused to answer)

| | <u>Percentage of Responses</u> |
|-------------------------|--------------------------------|
| Average Monthly Income: | |
| \$1 to \$20,000 | 80.0 |
| \$20,001 to \$30,000 | 6.4 |
| \$30,001 or above | 6.1 |
| Not regular | 7.5 |

Remarks:

For economically active respondents:

| | | |
|-----------|---|---------------|
| Mean | = | \$15,380 |
| Median | = | \$11,000 |
| Mode | = | \$10,000 |
| Std. err. | = | 586 (n = 489) |

APPENDIX 2

U.S. SURVEY

(Translated Into Chinese)

National Survey Weighted with San Francisco Over Survey

(Sample Size (N) = 409)

Hello. My name is _____. I'm calling long distance from _____. We are conducting a public opinion survey and I would like to ask you some questions. We are not selling anything, and I won't ask you for a contribution or donation.

Could I please speak with the (male/female) 18 or older in your household who celebrated a birthday most recently? [IF NONE AT HOME, SCHEDULE TIME FOR CALLBACK]

Before we get started, I need to ask you a few demographic questions to make sure I have a representative sample. What would you consider your main ethnic identity to be? [IF ASIAN, ASK:] From what country do most of your ancestors come? [TERMINATE IF NOT CHINESE]

GENDER OF RESPONDENT

| | <u>Percentage of Responses</u> |
|--------|--------------------------------|
| male | 50 |
| female | 50 |

LANGUAGE IN WHICH INTERVIEW WAS CONDUCTED

| | <u>Percentage of Responses</u> |
|-----------|--------------------------------|
| Cantonese | 38 |
| Mandarin | 30 |
| English | 32 |

- 1.** Some people use only Western medicine to treat illnesses or to maintain their health. Other people use alternative medicines, such as Chinese medicine to treat illnesses or to maintain their health. How about you, do you use Chinese medicine to treat illnesses or maintain your health?

| | <u>Percentage of Responses</u> |
|--------------------|--------------------------------|
| yes | 63 |
| no | 35 |
| don't know/refused | 2 |

[IF NO ABOVE IN Q.1]

- 2.** Have you ever used Chinese medicine?

| | <u>Percentage of Responses</u> |
|--------------------|--------------------------------|
| yes | 43 |
| no | 53 |
| don't know/refused | 4 |

[IF YES ABOVE IN Q.1 OR Q.2]

- 3.** Do you generally buy pre-packaged Chinese medicines, get a prescription by Chinese doctors, or both?

| | <u>Percentage of Responses</u> |
|---------------------|--------------------------------|
| pre-packaged | 26 |
| prescription | 22 |
| both | 43 |
| not sure/don't know | 9 |

[Percentage of Responses IN Q.1 OR Q.2]

- 4.** How often would you say you use Chinese medicine treatments, every day, once or twice a week, once or twice a month, a few times a year, or less than once a year?

| | <u>Percentage of Responses</u> |
|-----------------------|--------------------------------|
| every day | 5 |
| once or twice a week | 4 |
| once or twice a month | 12 |
| a few times a year | 44 |
| less than once a year | 25 |
| not sure/don't know | 9 |

RESUME ASKING EVERYONE

5. How much would you say you know about the specific ingredients contained in Chinese medicinal treatments? Would you say you know a great deal, some, not too much, or nothing at all about the specific ingredients of Chinese medicinal treatments?

| | <u>Percentage of Responses</u> |
|---------------------|--------------------------------|
| great deal | 5 |
| some | 21 |
| not too much | 34 |
| nothing at all | 37 |
| not sure/don't know | 4 |

6. Would you say that Chinese medicine consists mainly of plants and herbal ingredients, mainly of wild animal ingredients, uses both about equally, or aren't you sure about this?

| | <u>Percentage of Responses</u> |
|-------------------------|--------------------------------|
| mainly herbs and plants | 52 |
| mainly animal | 0 |
| both about equally | 15 |
| not sure | 33 |

[IF "USERS OF TCM" YES ABOVE IN Q.1 OR Q.2]

7. Would you say the Chinese medicines you yourself use consist mainly of plants and herbal ingredients, mainly of wild animal ingredients, do the medicines you use contain both equally, or aren't you sure about this?

| | <u>Percentage of Responses</u> |
|-------------------------|--------------------------------|
| mainly herbs and plants | 71 |
| mainly animal | 1 |
| both about equally | 5 |
| not sure | 24 |

[ASK ONLY IF "MAINLY ANIMAL" OR "BOTH EQUALLY" ABOVE IN Q.7]

8. Which of the following best describes the reason why you use Chinese medicine that contains wild animal ingredients?

9. Which is second best?

| | Percentage of Responses | |
|--|--------------------------------|-----|
| | Q.8 | Q.9 |
| [READ LIST AND ROTATE] | | |
| <input type="checkbox"/> it is prescribed by a Chinese medicine doctor | 12 | 7 |
| <input type="checkbox"/> it is recommended by someone at the herb store/pharmacy | 5 | 13 |
| <input type="checkbox"/> it is recommended by family or friends | 21 | 12 |
| <input type="checkbox"/> it is what I always use | 10 | 5 |
| <input type="checkbox"/> it is the only type of medicine I use | 0 | 19 |
| <input type="checkbox"/> it is necessary to cure my illness | 17 | 17 |
| <input type="checkbox"/> it is more effective than Western medicine | 3 | 0 |
| <input type="checkbox"/> it is cheaper than Western medicine | 0 | 0 |
| <input type="checkbox"/> it is part of my tradition | 33 | 9 |
| <input type="checkbox"/> it does not have side effects | 0 | 10 |
| <input type="checkbox"/> other [SPECIFY] | 0 | 0 |
| <input type="checkbox"/> don't know/refused | 0 | 10 |

RESUME ASKING EVERYONE

10. From which of the following do you take advice on when to use Chinese medicine and which medicines to use—or don't you uses Chinese medicine?

[READ LIST. RECORD ALL THAT APPLY:]

| | Percentage of Responses |
|---|--------------------------------|
| <input type="checkbox"/> family members | 10 |
| <input type="checkbox"/> senior relatives | 4 |
| <input type="checkbox"/> friends/colleagues | 2 |
| <input type="checkbox"/> Chinese medicine doctors | 12 |
| <input type="checkbox"/> someone at pharmacy/herbal shop | 1 |
| <input type="checkbox"/> books | 0 |
| <input type="checkbox"/> newspapers and magazine articles | 1 |
| <input type="checkbox"/> radio or television programs | 0 |
| <input type="checkbox"/> advertisements | 2 |
| <input type="checkbox"/> look for a specific name brand | 0 |
| <input type="checkbox"/> own experience | 4 |
| <input type="checkbox"/> Chinese culture | 1 |
| <input type="checkbox"/> other [SPECIFY] | 38 |
| <input type="checkbox"/> none | 2 |
| <input type="checkbox"/> no answer/refused | 5 |
| <input type="checkbox"/> DO NOT USE | 18 |

Now I am going to read you a list of some ingredients in Chinese medicine. After each, please tell me if you use medicines containing these ingredients frequently, sometimes, rarely, or never. If you are not sure about a particular item, please say so and we'll go on.

| ROTATE BY QUESTION, Q.11-Q.15] | Percentage of Responses | | | | |
|--------------------------------|-------------------------|-----------|--------|-------|----|
| | freq. | sometimes | rarely | never | DK |
| 11. ginseng | 17 | 35 | 29 | 18 | 1 |
| 12. tiger bone | 0 | 9 | 9 | 73 | 9 |
| 13. rhinoceros horn | 0 | 1 | 6 | 88 | 4 |
| 14. bear gall bladder | 0 | 1 | 8 | 82 | 10 |
| 15. musk deer gland | 1 | 1 | 13 | 70 | 14 |

Now I am going to read you some words and phrases, which some people have used to describe Chinese medicine. After each, please tell me how well that word or phrase describes Chinese medicine — does it describe Chinese medicine very well, pretty well, not too well, or not at all well? If you are not sure how well a particular word or phrase describes Chinese medicine, please say so and we will move on.

| [ROTATE BY QUESTION, Q.16-Q.23] | Percentage of Responses | | | | |
|--|-------------------------|-------------|--------------|------------|----|
| | very well | pretty well | not too well | not at all | DK |
| 16. Effective | 21 | 43 | 14 | 3 | 19 |
| 17. Has fewer side effects than Western medicine | 38 | 31 | 9 | 2 | 20 |
| 18. Less expensive than Western medicine | 17 | 26 | 25 | 7 | 26 |
| 19. Is an important part of Chinese culture and tradition | 59 | 30 | 4 | 1 | 6 |
| SPLIT SAMPLE A | | | | | |
| 20. Contains animal parts from endangered species | 10 | 34 | 24 | 9 | 23 |
| SPLIT SAMPLE B | | | | | |
| 21. Contains animal parts from endangered species | 5 | 28 | 17 | 15 | 35 |

Percentage of Responses

[ROTATE BY QUESTION, Q.16-Q.23]

RESUME ASKING EVERYONE

| | very well | pretty well | not too well | not at all | DK |
|---|------------------|--------------------|---------------------|-------------------|-----------|
| 22. Is mainly herbal or plant-based | 46 | 39 | 6 | 1 | 8 |
| 23. Can cure illnesses Western medicine cannot | 15 | 34 | 19 | 6 | 26 |
| 24. Have you ever heard the term “endangered species?” | | | | | |

Percentage of Responses

| | |
|-----|----|
| yes | 80 |
| no | 19 |

25. In your opinion, how important is it to you personally to save endangered species from extinction? Would you say it is very important, somewhat important, not very important, or not at all important?

26. As far as you know, are there Chinese medicines that contain parts from endangered species?

Percentage of Responses

| | |
|------------|----|
| yes | 42 |
| no | 21 |
| don't know | 37 |

27. What would you do if you found out that a Chinese medicine treatment that you use contains ingredients from endangered species — or don't you use Chinese medicine? [READ CHOICES]

Percentage of Responses

| | |
|--|----|
| ___ keep on using the medicine as usual | 12 |
| ___ keep on using the medicine, but less often or in smaller amounts | 19 |
| ___ stop using that particular medicine | 39 |
| ___ [VOL] depends | 17 |
| ___ don't know | 10 |
| ___ [VOL] DO NOT USE | 3 |

28. Which statement do you agree with more?

[READ AND ROTATE STATEMENTS]

- A. Some people say that Chinese medicine needs to use some ingredients from endangered species like tiger bone and rhino horn because these are the only effective treatments for some illnesses and substitutes do not work as well.

- B. Other people say that Chinese medicine does not need to use ingredients from endangered species like tiger and rhino and there are many alternatives to tiger bone and rhino horn that are just as effective.

___ Or aren't you sure about this?

Percentage of Responses

| | |
|---------------------|----|
| Statement A more | 17 |
| Statement B more | 62 |
| not sure/don't know | 21 |

29. Now I am going to read you two more statements and ask which you agree with more: [READ AND ROTATE STATEMENTS]

- A. The use of animal parts is just one part of Chinese medicine and there are usually only very tiny amounts of things like tiger bone or rhino horn used in treatments. Chinese medicine is not threatening endangered species. This argument is just Western prejudice against traditional Chinese culture and practice.

- B. Endangered species like tigers and rhinos are so close to becoming extinct that we must stop all human threats to these animals, including their use in Chinese medicine.

Or aren't you sure about this?

Percentage of Responses

| | |
|---------------------|----|
| Statement A more | 30 |
| Statement B more | 48 |
| not sure/don't know | 22 |

Now I'm going to read a list of short statements. After each please tell me whether you agree or disagree with what I have just read. If you are not sure, please say so and we'll go on.

[IF AGREE OR DISAGREE ASK:] Is that agree strongly or just agree?/ Is that disagree strongly or not strongly?

[ROTATE BY QUESTION, Q.30 TO Q.35]

| | | Percentage of Responses | | | | |
|----------------|---|-------------------------|-------------------|----------------------|------------------|---------------|
| | | Agree str. | agree not str. | disagree not str. | disagree str. | Don't know |
| SPLIT SAMPLE A | | | | | | |
| 30. | Human beings have an obligation to protect endangered species because they are part of the legacy we leave to future generations. | 38 | 45 | 7 | 1 | 0 |

| | | Percentage of Responses | | | | |
|----------------|---|-------------------------|-------------------|----------------------|------------------|---------------|
| | | Agree str. | agree not str. | disagree not str. | disagree str. | Don't know |
| SPLIT SAMPLE B | | | | | | |
| 31. | Human beings have a moral obligation to protect endangered species. | 38 | 50 | 7 | 1 | 4 |

| | | Percentage of Responses | | | | |
|----------------|--|-------------------------|-------------------|----------------------|------------------|---------------|
| | | Agree str. | agree not str. | disagree not str. | disagree str. | Don't know |
| SPLIT SAMPLE A | | | | | | |
| 32. | Human beings will suffer if endangered species become extinct. | 24 | 44 | 18 | 4 | 9 |

| | | Percentage of Responses | | | | |
|----------------|---|-------------------------|-------------------|----------------------|------------------|---------------|
| | | Agree str. | agree not str. | disagree not str. | disagree str. | Don't know |
| SPLIT SAMPLE B | | | | | | |
| 33. | Human beings will suffer if endangered species become extinct because when we cause animals to go extinct, we are disrupting the balance of nature. | 33 | 48 | 9 | 3 | 7 |

| | | Percentage of Responses | | | | |
|------------------------|--|-------------------------|-------------------|----------------------|------------------|---------------|
| | | Agree str. | agree not str. | disagree not str. | disagree str. | Don't know |
| RESUME ASKING EVERYONE | | | | | | |
| 34. | It is important to protect endangered species because these plants and animals may contain the cures for human diseases like cancer and AIDS. Human beings may one day rely upon these creatures for survival. | 21 | 37 | 17 | 9 | 16 |

Percentage of Responses

| | Agree str. | agree not str. | disagree not str. | disagree str. | Don't know |
|---|-----------------------|---------------------------|------------------------------|--------------------------|-----------------------|
| 35. It is important to protect endangered species because many of these plants and animals are important symbols of our culture and history. | 28 | 50 | 12 | 2 | 8 |

Now I am going to read some reasons people have given us to stop all use of endangered animals in Chinese medicine. After each, please tell me whether you think it is a very convincing reason to stop the use of endangered animals in Chinese medicine, somewhat convincing, not too convincing, or not convincing at all. If you are not sure how you feel about a particular item, please say so and we'll move on.

[ROTATE BY QUESTION, Q.36-Q.39]

Percentage of Responses

| | very | some what | not too | not at all | Don't know |
|--|-------------|----------------------|--------------------|-----------------------|-----------------------|
| 36. Over 90 % of rhinos have disappeared in the last 25 years and there are fewer than 5,000 tigers left in the wild. If we are to have any hope of saving these animals, we must stop all human threats—pollution, hunting, and use in Chinese medicine. | 40 | 37 | 9 | 2 | 11 |

Percentage of Responses

| | very | some what | not too | not at all | Don't know |
|--|-------------|----------------------|--------------------|-----------------------|-----------------------|
| 37. Research has already shown that buffalo horn can be substituted for rhino horn and that ox bone works as well as tiger bone. Because there are so few tigers and rhinos left in the wild, Chinese medicine will have to find and use substitutes for these treatments anyway. | 30 | 38 | 11 | 4 | 17 |

Percentage of Responses

| | Agree str. | agree not str. | disagree not str. | disagree str. | Don't know |
|--|-----------------------|---------------------------|------------------------------|--------------------------|-----------------------|
| 38. Endangered species are protected by both US law and international treaties and it is against the law to trade or sell endangered species parts. | 41 | 32 | 13 | 3 | 12 |
| 39. Like the panda in China, animals like tigers and rhinos are national treasures that must be preserved. We need to do all we can to save these valuable animals, including ending their use in Chinese medicine. | 43 | 39 | 8 | 1 | 9 |

THANK YOU. THE REMAINING QUESTIONS ARE FOR STATISTICAL PURPOSES ONLY.

40. Which of the following ranges best describes your age?

| | Percentage of Responses |
|--------------|--------------------------------|
| 18 to 24 | 20 |
| 25 to 29 | 12 |
| 30 to 34 | 11 |
| 35 to 39 | 15 |
| 40 to 44 | 8 |
| 45 to 49 | 5 |
| 50 to 54 | 4 |
| 55 to 59 | 6 |
| 60 to 64 | 4 |
| 65 and older | 15 |
| REFUSED | 1 |

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41. What was the last level of schooling you completed?

| | <u>Percentage of Responses</u> |
|--------------------------------|--------------------------------|
| less than high school graduate | 18 |
| high school graduate | 18 |
| some college | 18 |
| college graduate | 27 |
| post graduate | 18 |
| no answer | 1 |

42. Were you born in the United States or outside the United States:

| | <u>Percentage of Responses</u> |
|-----------------------|--------------------------------|
| United States | 30 |
| Outside United States | 70 |

IF BORN OUTSIDE U.S. ABOVE:

43. Where did you come from:

| | <u>Percentage of Responses</u> |
|--------------------------------------|--------------------------------|
| China | 49 |
| Hong Kong | 18 |
| Taiwan | 20 |
| Singapore | 0 |
| Southeast Asia (excluding Singapore) | 10 |
| other | 1 |
| refused/no answer | 2 |

44. How long have you been living in the United States?

| | <u>Percentage of Responses</u> |
|----------------------|--------------------------------|
| less than one year | 3 |
| one to five years | 23 |
| five to ten years | 17 |
| ten to twenty years | 32 |
| twenty years or more | 23 |
| refused/no answer | 2 |

45. What language do you speak most often at home?

| | <u>Percentage of Responses</u> |
|-------------------|--------------------------------|
| Cantonese | 40 |
| Mandarin | 22 |
| English | 23 |
| Taiwanese | 2 |
| Toihanese | 2 |
| other | 10 |
| refused/no answer | 1 |

46. Do you have children 18 years old or younger living at home?

| | <u>Percentage of Responses</u> |
|-------------------|--------------------------------|
| yes | 38 |
| no | 61 |
| refused/no answer | 1 |

47. In which of the following ranges does your family income fall?

| | <u>Percentage of Responses</u> |
|-------------------|--------------------------------|
| below \$12,000 | 12 |
| 12 to 20 thousand | 9 |
| 20 to 30 thousand | 13 |
| 30 to 40 thousand | 12 |
| 40 to 50 thousand | 6 |
| 50 to 75 thousand | 15 |
| above 75 thousand | 12 |
| refused/no answer | 23 |

48. What is your zip code?

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That completes our public opinion survey. Thank you very much for your time and cooperation, and have a pleasant day/evening.