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The safety of bycatch: South Korean responses to the moratorium on commercial whaling

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Abstract When the global moratorium on commercial whaling was implemented in 1986, Korea prohibited whaling; however, there was no effort to build the capacity of social institutions to guide local residents to cooperate with the policy. Utilizing a social ecology approach, this research examines the practice of eating whale meat in Ulsan, South Korea, to illustrate the importance of culture for attaining the social acceptance of wildlife conservation policy. The cultural models which influence the consumption of whale meat are here classified as representing four distinct responses to the moratorium: opposition, resistance, evasion and support. The two most important changes are the public utilization of whale meat as a symbol of an endangered culture, and the reliance on meat procured legally from accidental entanglements of whales in fishing nets (cetacean bycatch). These cultural changes have a social function, which is to impart legitimacy and acceptance to the continued consumption of whale meat, from illegal as well as legal sources. Given the cultural acceptance of whale meat, I argue that it will not be possible to eradicate the illegal market through enforcement alone. Instead, the solution is to persuade local consumers of whale meat to cooperate with the moratorium.

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Introduction

Since 1986, it has been illegal to hunt whales, porpoises or dolphins in South Korea. However, the Korean delegates at the 64th meeting of the International Whaling Commission [IWC] caused an international uproar when they announced Korea's plans to hunt North Pacific minke whales [*Balaenoptera acutorostrata*] for scientific purposes. After diplomatic

protests from other governments, South Korea backed away from the initial statement and cancelled the program of research whaling (Oh, 2012). Opponents of whaling saw it as a victory for whale conservation, and announced that the international moratorium on commercial whaling in effect since 1986 would continue protecting whales in Korea.

However, because of increasing demand for whale meat and high incidence of illegal whaling, the moratorium has failed to protect whales in Korea. In January of 2011, South Korea announced a tougher policy to combat whaling (BBC News, 2011). In spite of the tougher enforcement measures, in 2011 South Korea had the highest incidence of illegal

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whaling in the world, with 22 Korean citizens receiving prison sentences and fines for 21 cases of whaling discovered by police (Yonhap News, 2012). Furthermore, Korea has a high incidence of accidental whale deaths caused by entanglements in fishing nets. For the years 2004–2011, 89 minke whales on average die annually in net entanglements. Known as “incidental catch” or “bycatch,” these whales can be sold legally in Korea for human consumption. Both illegal whaling and incidental catch continue to feed Korea’s growing demand for whale meat.

Bycatch has been the cause of intense debate between the opponents of whaling and the proponents of whale meat. Environmentalist groups such as KFEM [Korean Federation of Environmental Movements] and Greenpeace have argued that in most cases, the accidental entanglements of whales in fishing nets are not in fact accidental (Black, 2005; Demick, 2005). They claim that Korea’s high rate of minke whale bycatch compared to other countries cannot be coincidental, and must surely indicate a disguised form of whaling. In contrast, Korean fishermen have argued that the unusually high rate of bycatch is an indicator that as a result of the moratorium, whales have reproduced to the point of extreme overabundance. For the fishers, frequent bycatch is a sign that whale and dolphin populations need to be thinned artificially through hunting (SBS News, 2012). In an attempt to correct this misperception, scientists of the Cetacean Research Institute [CRI] of Korea have clarified that there is no direct relationship between the size of the minke whale population and the incidence of bycatch (SBS News, 2012).

In this article, I maintain that the debate about Korea’s high level of bycatch is not merely a conflict of opinion, such as could be resolved by scientific evidence. Rather, it is a clash of opposed cultural interpretations, in the sense of “models of and for reality” (Geertz, 1977). Anthropologists have utilized the concept of “cultural model” to refer to knowledge about the environment, knowledge which is structured by social organization and which has visible influence on discourses and behaviors at the community level (Blount and Kitner 2007; Paolisso and Dery, 2010). Culturally motivated behaviors can pose major problems for conservation of biological species and natural resources. This is the case of the moratorium on commercial whaling in Korea, where reactions to the moratorium have undermined the efforts to protect whales from human predation. Based on this case study, I advance the argument that a successful policy to protect whales from human predation must take full account of the local culture.

Why do Koreans continue to eat whale meat, even though whaling is illegal in Korea? The motivations are cultural. Whale meat is a delicacy in the southeastern coastal cities of Korea, especially in Ulsan, Busan, Gyeongju and Pohang. Unique among these cities, Ulsan is the center of a political movement to legalize and reinstate whale hunting in defiance of the worldwide moratorium. The municipal government of Ulsan Namgu [South District] has attempted to promote the use of whale meat to attract tourists and business development. Ulsan is also the city with the highest concentration of whale meat specialty restaurants. As a recognized center of culinary activism and political support for whaling, Ulsan was chosen for this research as the source of discourses about the cultural value of whale meat Fig. 1.

Bycatch in Korea must be studied as a socio-cultural and socio-economic problem which stands in the way of whale

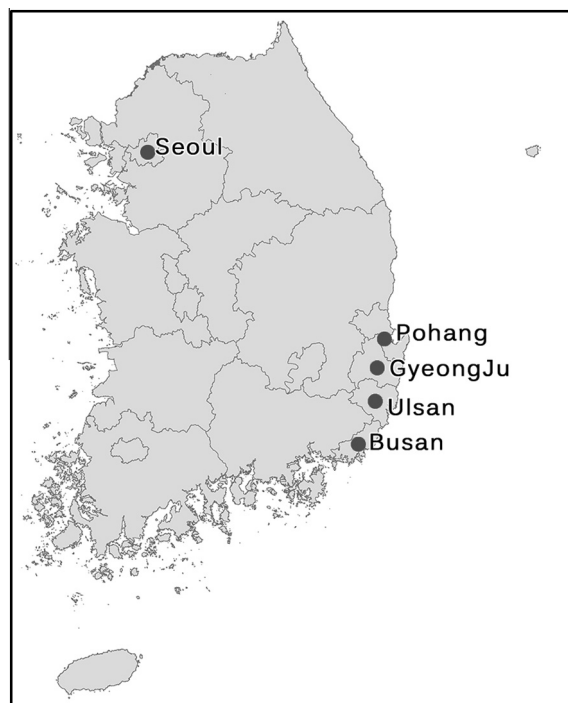


Fig. 1 Map of Korean cities where whale meat is eaten. Courtesy of D.K. Yoon, UNIST School of Urban and Environmental Engineering, using ArcGIS.

conservation management in Korea. What is important for conservation policy is not whose conception of bycatch is “correct,” but the social context in which these cultural models acquire descriptive power. In South Korea, this context is characterized by three important social phenomena: mobilized stakeholders taking action to defend the use of whale meat in a culinary subculture; the intervention of local government to promote whale meat as a symbol of cultural heritage; and the existence of a consumer-driven market for whale meat. The research method undertaken here is to uncover the social functions of the cultural models utilized by actors in this social context.

Materials and methods

The research was carried out through interviews and direct observation. Interviews were carried out with public officials of the Bureau of Whale Tourism of Ulsan Namgu Kang Jun-hee and Suh Jae-in, who provided valuable assistance. In addition, the author is grateful to Lee Man-woo and Go Jeong-goo of the Whale Culture Preservation Association [WCPA] for generously allowing numerous interviews and patiently explaining their views about the future of whales and “whale culture” in Ulsan. I am also grateful to Park Seon-goo, Director of the Ulsan Whale Museum, and I am especially grateful to An Du Hae, Director of the Cetacean Research Institute [CRI] of the National Fisheries Research and Development Institute.

Direct observation was carried out by the author at staged public events in the city of Ulsan. I attended the Ulsan Whale Festival four times (2010–2013) and observed how whale meat

was presented to the public in an atmosphere of spectacle. On two occasions I attended the unveiling and dedication of new facilities in the Special Zone for Whale Culture. In these public ceremonies I was able to observe the behaviors of Ulsan citizens and to engage some of them in conversations. Members of the public were able to observe me, too, and I was questioned about my own beliefs regarding whales and whaling. These conversations and observations were recorded in my field notes, from which I have compiled data on the four different reactions to the moratorium.

Presenting the case of Ulsan in Korea, I argue that the moratorium on commercial whaling can only succeed in protecting whales if the policy will be adapted to the local culture. In Ulsan, opposition to the moratorium on commercial whaling is guided by a set of popular beliefs:

- [1] Eating whale meat is not harmful to the environment.
- [2] As a result of the moratorium, whales have multiplied and are now abundant.
- [3] The high rate of minke whale bycatch is proof that the whales are now abundant.
- [4] Whales are eating the fish that humans need as food. We must selectively kill whales to control the population and control their fish consumption.

In this investigation, I have focused on #1, the belief underlying the consumption of whale meat, primarily dealing with the notions held by whale meat consumers, retailers and activists. This research did not include fieldwork among fishermen, and I will not address 2, 3, and 4, which are beliefs prevalent in Korean fishing communities discovered by MacMillan and Han (2011).

Theory: social acceptability of policies and environmental governance

In the debate about the use of cetacean bycatch as a source of meat, there are two perspectives. First, conservation biologists and environmental activists advocate for a technical and scientific solution. They argue for “increased oversight and control by the governments of Korea and Japan,” which can be achieved if improvements are made in the procedures for detecting illegally sourced whale meat and with increased accuracy of reporting (Lukoschek et al., 2009; Baker et al., 2006). The conservation scientists advocate for the use of DNA sampling to monitor markets and cross-check government claims or accounts of illegal wildlife trade. These assertions reflect the assumption that better methods for detection of illegal wildlife trade will lead to improvements in enforcement. However, it can also be argued that enforcement of wildlife conservation is not a technical issue, but a social and political one.

From a social scientific perspective, technical improvements in enforcement are not adequate to overcome the problems of wildlife exploitation (Wilshusen et al., 2002). The problem should be understood as a failure of social institutions to establish rules to guide the members of the society toward a desirable conservation outcome (Acheson, 2006). Social scientists advocate the improvement of “governance,” which is the design of social institutions for management of wildlife and to control the drivers of human resource use (Lejano et al., 2007; Ostrom, 2008; Swiderska et al., 2008; Young et al., 2007).

From this perspective, the policies for conservation of wildlife and biodiversity are most likely to be successful when the policies achieve social acceptability. Following Thomassin et al. (2010, p. 170), social acceptability can be defined as a “measure of support for a set of regulations, management tools or towards an organization by an individual or a group of individuals based on geographic, social, economic and/or cultural criteria.”

The most important first step toward achieving social acceptability for a conservation intervention is to carry out a social impact assessment [SIA]. The SIA “includes the processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions” (Vanclay, 2003). To succeed, an intervention in social-ecological systems requires building the capacity of regulatory institutions as well as an effective system of monitoring (Ostrom, 2008; Young et al., 2007). Creating strategies for capacity building and monitoring requires conducting an SIA prior to the implementation phase of the policy.

The IWC moratorium is easily implemented in countries where whales are not used as food, but its implementation in Japan or Korea raises special challenges. In Korea, the moratorium on commercial whaling was imposed without conducting an SIA. It is hardly surprising that unintended social consequences have developed, including a market for illegally hunted whale meat. Given that millions of people in Korea have cultural beliefs about the value of eating whale meat, how can it be possible to convince them to cooperate with the moratorium on commercial whaling? This is the enormous challenge that must be undertaken by a systematic SIA in the future. In spite of the need for a more complete analysis to be carried out by a team of experts, I begin the initial task with the following cultural analysis of whale meat consumers in the city of Ulsan.

Results

Local reactions to the moratorium

In the seaside neighborhood of Jangsaengpo, located in Nam-gu [South District] in the city of Ulsan, whale meat has been an important tradition ever since the early 1900s when Russian and Japanese whalers based their whaling activities here (Ii, 2013; Watanabe 2009). After the conclusion of the Korean War, Jangsaengpo residents set up their own whaling operations and supplied whale meat as a cheap and plentiful source of meat. By the 1970s, Jangsaengpo whalers were exporting the meat to Japan to realize higher profits (Ii, 2013). As the prosperity brought by whaling spread to all members of the local community, locals exclaimed happily that “even stray dogs in the street have ten thousand won bills in their mouths.”

Hence, the cessation of whaling in 1986 seemed unfair and intolerable to the Jangsaengpo citizens. There was evidence that whale stocks were in decline, but the Korean government made no effort to convince the people that compliance with the moratorium would be in their best interests. The law was simply implemented and enforced. The Korean government was preparing for the 1988 Olympiad in Seoul, and compliance with the global moratorium was seen as necessary to avoid bad publicity. In fact, the Korean government was already

concerned about dog meat consumption and how it would be viewed during the Olympics by the international community (Derr, 2004). The Korean government implemented the global moratorium on commercial whaling, without carrying out an SIA, and without giving recognition to the whaling culture of Ulsan residents.

However, by 1995, Jangsaengpo residents mobilized in defense of their culture by organizing a new event, the Ulsan Whale Festival. The purpose of the festival was to keep the local culture alive, by portraying whale meat as an important cuisine, and allowing members of the public to taste whale meat directly. The festival was also created to expose the members of the public to the cultural history of whaling. This motivated the festival organizers to combine the whale meat cuisine with a more holistic and totalized portrayal of the culture of whaling. In the words of one of the original organizers of the festival, “Eating whale meat is essential, but by itself it is a limited thing, so we need to have a holistic and comprehensive performance culture...like in Taiji in Japan, where they use drumming when they perform whale culture.” (Lee Man-woo, Vice-president of Whale Culture Preservation Association, personal communication, 9 September 2011).

Nevertheless, in contrast with Japan where some communities that have practiced whaling for hundreds of years continue to maintain spiritual and religious bonds with whales (Kato, 2007), the public celebration of whale meat as Ulsan’s tradition is a recent phenomenon. Hence, the initiation of the Ulsan Whale Festival marked the emergence of a mobilized cadre of cultural promoters who sought to continue the consumption of whale meat under the banner of “tradition.” However, it marked the emergence of a totally new social practice, which is the public presentation of whale meat as a marker of collective identity and tradition. The Ulsan Whale Festival is the occasion for numerous ceremonies and spectacles in which the tasting of whale meat is a central event. In other words, whale meat became not only a food valued for its own sake, but it became a symbol of an endangered culture, threatened by the moratorium.

Indispensable to this newly emergent social practice was the availability of whale meat from bycatch. Jangsaengpo people regard the whale meat from bycatch as inferior, tasting less fresh and less flavorful than the meat derived from whaling. However, the moratorium had left them little choice other than bycatch. According to the Director of the Ulsan Whale Museum, “The whale food culture is maintained through the meat obtained from the whales that were accidentally caught in nets. For the whale festival, the restaurants provide whale meat for those people who want to try the food or those people who miss the whale meat” (Park Seon-goo, Director of Ulsan Whale Museum, personal communication, 11 April 2013).

Hence, the meat taken from cetacean bycatch allows people to experience the memories of Ulsan’s past society and culture. In this respect, whale meat from bycatch serves two important public functions. First, it makes it possible to portray a collective heritage of the city, which represents the past history and roots of all Ulsan citizens. Second, it also functions to allow the survival of a local culture which is viewed as threatened by the moratorium on commercial whaling. However, this public culture which represents whale meat as something critical and necessary for community identity also gives a positive image to the private, individualized consumption of whale meat in restaurants and private residences. In other words,

the public culture of whale meat helps to legitimize the private consumption. This produces a market for whale meat with demand that far exceeds the amount that can be procured through bycatch. As a result, illegal whaling is a profitable activity in the context of a culture in which the consumption of whale meat continues to be socially accepted by a sizable public.

Utilized as a symbol of an endangered culture, whale meat in Ulsan today is not merely a continuation of a time-hallowed tradition. Rather, the consumption of whale meat derived from bycatch in Ulsan today is a new social practice, recently concocted for the purpose of representing and experiencing the past as a collective heritage. The culture of whale meat consumption in Ulsan today can best be understood as a reaction to the moratorium, rather than a static or unchanging tradition. In Ulsan, the responses to the moratorium are diverse and heterogeneous, but can be grouped as signifying only four different postures toward the commercial moratorium on whaling. I have documented and classified four reactions to the moratorium: opposition, resistance, evasion, and support.

Opposition implies organized political action, attempting to overturn anti-whaling laws and directives at the national as well as the international levels. Resistance means breaking the law, and continuing to carry out whaling for commercial purposes. Evasion is the stance of complying with the moratorium and avoiding a pro-whaling posture, while continuing to eat whale meat. Finally, support for the moratorium means supporting anti-whaling laws and avoiding all consumption of illegal whale meat. In the following, I describe the four reactions of opposition, resistance, evasion and support.

Opposition

Why do many people in Ulsan refuse to accept the need for the global moratorium on commercial whaling? One important argument is that whales must be eaten for the survival of the local culture. This has been argued many times, such as in newspaper editorials (Choe, 2008; Lee, 2012). Mr. Go Jung-goo, director of a local pro-whaling citizen’s group known as the Whale Culture Protection Association [WCPA] explained, “The Inuit in Alaska are not the only ones who must eat whale for survival; we the people here in Jangsaengpo also need whaling for our survival” (Go Jung-goo, personal communication, 11 April 2013).

This indicates that Ulsan’s local whaling advocates see themselves as candidates for “aboriginal subsistence whaling,” which permits whaling for the purpose of cultural survival (Hamaguchi, 2013). They disagree with environmentalists’ argument that Native Americans in the U.S., Inuit and First Nations of Canada have authentic cultural rights to hunt whales, whereas Koreans or Japanese do not (Scheiber, 1998). The Ulsan pro-whaling activists directly oppose this idea. From their perspective, bycatch is merely a second best option, but it is absolutely necessary for cultural survival in the era of the moratorium.

The Koreans who want to continue whaling perceive the issue as one of social justice. From its base in Jangsaengpo, the WCPA has participated in organized efforts to overturn the moratorium on whaling. In 2009, the organization helped to collect over 20,000 signatures from Ulsan citizens to demand the right to reinstate whaling (Jung, 2009). The

signatures were delivered to the IWC by Kim Doo-gyeom, the District Mayor of Ulsan Namgu. These and other political actions reflect the local perception that the moratorium on whaling violates the local rights of Ulsan citizens.

Resistance

Resistance to the moratorium on commercial whaling is an effort to continue using whale meat from whales hunted illegally. A major source of resistance comes from restaurant owners and others who sell whale meat to consumers. These stakeholders complain that law enforcement is making whale meat scarce. For example, one restaurant owner pointed out, “There are about 100 whales caught legally as bycatch each year, but at least 300 are consumed nationwide” (Lee, 2011). Hence, these entrepreneurs believe that they have no choice other than to buy whale meat from illegal catch (Kyeongsang Ilbo, 2011).

One whale meat restaurant owner remarked tersely, “No matter how expensive it gets, people keep coming here to eat it” (Mr. K., personal communication, 28 January 2011). This is not merely a justification of the desire to profit from selling meat from an endangered species, but indicates a deeper understanding of the forces of supply and demand. The restaurant owner is saying that conservation and enforcement measures will not be able to prevent the market from supplying the consumer, as long as there is vigorous demand for the product. Hence, the restaurant owner understands the market for whale meat as a consumer-driven phenomenon, not as supply-driven.

The idea that the market for whale meat is consumer-driven rather than supply-driven has major consequences for conservation policies in Korea, because the policies target only the sources of illegal whale meat rather than consumers (Tatar and Lee, 2012). For example, Macmillan and Han (2011) found that scarcities caused by enforcement efforts led to higher prices and stimulated demand, which led to intensification of illegal whaling. The restaurant owner quoted above also stated, “I never want to speak to journalists because when I do, other people read in the newspapers that the price of whale meat is high and they open their own restaurants” (Mr. K., personal communication, 28 January 2011).

In fact, there is some evidence that whale meat restaurants are increasing in number in Korea. For example, searching the Internet in 2011, I found listings (with addresses and phone numbers) for a total of 156 whale meat specialty shops. Out of this total, 69 were listed in Ulsan, 19 in Pohang, and 25 in Busan. However, there were also 29 whale meat specialists in Seoul and Kyunggi Province, outside of the region where whale meat is traditionally consumed. Critics also point out that whale is served in non-specialty establishments as well, such as regular sushi restaurants (Kang, 2010). I was also able to find minke whale meat sold for home delivery on two of Korea’s popular Internet shopping sites.

It is also important to mention that the Ulsan Namgu Bureau of Whale Tourism is promoting whale meat as an option for tourists who want to discover the delicacy. Ulsan Namgu has commissioned a professor of culinary arts to develop new recipes which do not have the characteristically strong smell of whale meat (Kwak, 2011), enabling young consumers to try whale meat for the first time. This is a major

departure from the whale meat prepared in the traditional recipes of Jangsaengpo, as described by Li (2013). A restaurant owner in Jangsaengpo remarked, “I don’t want to sell the new ‘Whale’s Table,’ because it is too difficult for us to provide both the old menu and the new menu for customers. Already it’s difficult to procure whale meat, and the new menu requires us to procure many other things.” (Mr. C., personal communication, 27 April 2012). Nevertheless, Ulsan Namgu publishes brochures for visitors to Ulsan which include a list of restaurants which serve the “Whale’s Table” (Figs. 2–5).

It is difficult to understand why Ulsan Namgu is trying to recruit new consumers with non-traditional recipes, given that the supply of legally sourced whale meat from bycatch is very limited. An official of Ulsan Namgu responded to the question, “Since the supply is limited it cannot sustain the large number of restaurants. That means that through the natural action of the market, many restaurants will be forced out of business and only the leading ones will remain, allowing the supply and demand to meet equilibrium once again” (Suh Jae-in, personal communication, 24 August 2011). This seems to imply that only the restaurants capable of providing the “Whale’s Table” menu promoted by Ulsan Namgu will remain in business. The intervention by Ulsan Namgu seems to be aimed at maximizing profits for a few whale meat retailers. Hence, Ulsan Namgu’s goal is very distant from the local community goal of using bycatch as a food source for the survival of Jangsaengpo’s distinctive culture.

Evasion

One important fact about whale meat in Ulsan is that many who eat it do not in fact oppose the moratorium. These consumers claim that eating whale meat is harmless, as long as the animal was not intentionally hunted but died through accidental entanglement. I refer to this as the “safety of bycatch” claim. Behind this claim is the belief that cetacean bycatch is not preventable, so using it as a source of food does not hurt whale populations nor bring harm to the environment. This stance allows a person to swear compliance with the



Fig. 2 A plate of whale meat as traditionally served by restaurants in Jangsaengpo, Ulsan. The meat is served raw or parboiled and accompanied by dipping sauces. The meats are not seasoned, except for the marinated raw meat served with pear slices in the center.

대표주	
고래코끼리(대) 100,000	고래 (대) 40,000
모듬 (중) 80,000	두루치기 (중) 30,000
(소) 60,000	(소) 20,000
수육 40,000	도미 (대) 90,000
막걸기 40,000	(중) 60,000
육회 40,000	(소) 70,000
오배기 40,000	광어 (대) 90,000
우네 40,000	(중) 60,000
고래찌개 (대) 30,000	(소) 60,000
(중) 20,000	황새 10,000
(소) 15,000	블라 10,000

전설의 집 A.P.R.C. 후원
 보배복분자 10,000
 5년숙성 찰고추 매실주 8,000
 보배매취순
 제2회 전설간경매장
 보배가시오가피주 4,000
 선종대 10,000 소주/백주 3,000
 가을곡과 6,000 음료수 1,000
 매실마늘 6,000 궁기밥 1,000

*작, 김치도 국내산만 사용합니다.

Fig. 3 A menu of "traditional" dishes typical of Ulsan whale meat. The boiled and raw servings of sliced meat are listed on the left side. In addition, this restaurant serves goraе chiggae (whale stew) and goraе duruchigi (whale stir fry in chili sauce).



Fig. 4 A bowl of whale meat dumpling soup. This non-traditional dish was displayed at the Ulsan Whale Festival in 2012.

moratorium while also enjoying whale meat. The "safety of bycatch" claim functions as basic knowledge for many consumers of whale meat in Ulsan.

The importance of this belief was first brought to my attention by a member of the audience at the 5th annual Korean/Japanese Whale Meat Cooking Competition, an event held annually in Jangsaengpo from 2007 to 2011. As the dishes were served, an older man in the audience approached me and explained, "These whales that we eat were not hunted. They are caught in the fisher's net by accident. Whaling is illegal in Korea."

The same posture toward whaling was revealed in a nationwide survey carried out in Korea in 2009 by Greenpeace and KFEM (KFEM, 2009). The survey reported that 67.9% of respondents opposed whaling, while only 16.7% supported commercial whaling. Nevertheless, the same survey reports that 58% of respondents answered in favor of using bycatch as a source of whale meat if the whale is already dead when encountered by the fisherman.



Fig. 5 At the 2012 Ulsan Whale Festival, members of the public viewed the new menu items.

Another example suggests the difference between consuming bycatch and consuming hunted whales is taken seriously in Ulsan. A commercially released film called "The Bicycle Looking for a Whale" was produced by Ulsan Namgu. It is a fictional story of a fugitive from the law who was unjustly accused of whaling. When two children learned of his past and confronted him, the man defended himself by saying, "I never killed a living whale. . . I only butchered whales that were found already dead. To butcher a dead whale is not nearly as cruel as to kill a live whale" (English subtitles, *Bicycle Looking for a Whale*, 2011).

The anti-whaling activists claim that these beliefs are not a genuine part of Korean culture, but are calculated justifications for eating whales and for seeking the resumption of whaling (Kim 2011). However, it is significant that many whale meat consumers in Korea do not openly assert opposition to the moratorium but actually assert their support for it. This contrasts with Japan, where opposition to the moratorium is openly expressed (Blok, 2008; Bowett and Hay, 2009). In the social context of Ulsan, the "safety of bycatch" concept provides a genuine perception of legitimacy to the practice of eating whale meat in restaurants.

Support

Although whaling is a tradition in Ulsan, there are residents of the city who oppose whaling and support the moratorium on commercial whaling. This viewpoint is most strongly expressed by the members of the KFEM. They argue that, "Whale meat is neither a necessity nor a traditional food. It does not make sense that animals that are on the verge of extinction are caught because of a minority of epicures" (Limb, 2005). In their view, the cultural practice of eating whale meat is merely an invention and is not a genuine part of Korean culture.

There are three major points argued by the environmentalists. First, they argue that Ulsan Namgu utilizes the Ulsan Whale Festival to promote the consumption of whale meat, motivated by profits reaped by whale meat vendors (Oh, 2008, 2011). By combining the information about whale

ecology with the consumption of whale meat, the festival serves to confuse citizens who may not understand the endangered status of the whales (Choi, 2010). In addition, the environmentalists argue that the number of whale meat restaurants in Korea is increasing rapidly, and that this is an indicator of augmented consumer demand (Kim, 2011; Limb, 2005; Oh, 2011). This argument implies that the whale meat market is largely supplied by meat from illegal whaling. The argument contrasts directly with the anti-whaling activists' portrayal of Japan, where they claim that demand for whale meat is precipitously declining (Clapham et al., 2007).

Finally, the third argument is that eating whale meat from bycatch is not safe, because bycatch is a disguised form of directed whaling. A British collaborator with KFEM explained, "The Koreans make a big song and dance about how they don't harpoon whales, but you don't need a harpoon to kill a whale. It is very easy to drown a whale in your net" (Demick, 2005). Furthermore, the fact that there is a market for whale meat means there is no incentive for a fisher to free a whale that has become entangled.

KFEM has led protests against whaling on the streets of Ulsan and Seoul, and has also participated in scientific research to identify meat from illegal whaling that is sold in the markets and restaurants (Baker et al., 2010). Through seminars and public events, KFEM has tried to disseminate the scientific evidence in support of the hypothesis that whale meat consumption is extremely harmful to whale populations and their chances of survival (Lee, 2009). However, the scientific evidence is based on DNA forensics, with the result that the average member of the public has difficulty understanding the evidence. While interviewing citizens at the Ulsan Whale Festival, the author has met some who agree that whales are endangered; however, not one of these persons was able to mention the scientific evidence in support of her or his viewpoint. This opacity of DNA science for members of the general public illustrates the difficulty of gaining converts to anti-whaling in Ulsan on the strength of scientific evidence.

Conclusion and recommendation for future policy

The policy I focused on is the global moratorium on commercial whaling, a policy with worldwide reach; I have examined how local stakeholders react to the moratorium in Ulsan. Presenting the reactions of urban consumers as well as retailers of whale meat, I have tried to demonstrate that attitudes toward whale meat are not simply based upon ideas about whales or whaling. Rather, the stakeholders' attitudes about whale meat also reflect their knowledge of the policy itself, including their understandings of how the policy operates, how it fails or succeeds in achieving its goals, and how it impacts the local society. I have categorized these discourses to provide a knowledge inventory of the local stakeholders.

The management of social-ecological systems requires stakeholder involvement which is critical to the tasks of building institutional capacity for monitoring and enforcement (Ostrom, 2008; Young et al., 2007). How can we draw upon the Korean stakeholders' knowledge to outline a direction for more successful whale conservation policy?

First, to involve the local stakeholders it is absolutely necessary to gain their trust. This requires showing respect toward the local culture of whale meat consumers. The local whale

meat constituency must not be derided as "a minority of epicures," or else as practitioners of a "primitive" custom. The fact that a large constituency continues to view whale meat consumption as legitimate suggests that whale conservation will not be achievable without the constituency's collaboration and cooperation. Every effort should be made to secure the trust and support of whale meat consumers for the commercial moratorium on whaling, even if this seems to be an insurmountable task. The task begins by showing respect for their culture.

Second, it is important to find points of commonality between the opposed points of view. The environmentalists and the pro-whaling constituents alike have indicated their belief that the market is driven by demand for whale meat. The current whale conservation policy in Korea focuses on supply, by restricting the legal source of whale meat to bycatch, and using law enforcement in the attempt to eradicate illegal whaling. However, if the stakeholders view the market as demand driven, this suggests that a radical new approach to whale conservation is necessary. However, such a policy cannot succeed unless demand is also decreased through restrictions on consumption as well. In other words, control, monitoring and enforcement must be extended to consumer practices as well as to combat whaling.

Hence, it is important to extend government control to the retail sale and consumption of whale meat as well. DNA forensic technology should be applied to prevent meat originating from illegal sources from being sold in the market, utilizing the methods demonstrated by Baker et al. (2010). However, restricting the type of whale meat sold according to its source may not be adequate for protecting endangered populations.

In addition, there must be restrictions on where whale meat can be sold, and by whom. Currently, minke whale meat is available for home delivery in Korea if ordered on the Internet. Furthermore, whale meat restaurants are becoming more common in Seoul and elsewhere outside of the traditional area on the southeastern coastline of Korea. Much of this consumption is not for cultural or traditional needs, but merely to satisfy the curious palate. In order to reduce demand, the Korean government should limit consumption to traditional events (Ulsan Whale Festival) and locations (Jangsaengpo waterfront restaurants).

How can the whale meat constituents be convinced to cooperate with a system of retail monitoring and enforcement? Borrowing from Ostrom (2008), I suggest creating a unique set of entitlements for a select set of merchants and advocates of whale meat. Whale meat commerce should be open only to those who have a proven cultural and historical connection to whale meat. This type of control can be carried out through the issuance of a limited number of retail licenses, such as the license system used in Japan to control retailers of tuna (Bestor, 2004). Such a licensing system would help to limit the volume of whale meat traded, while also facilitating monitoring and control by the authorities; at the same time, it would safeguard the cultural rights of those Koreans who view whale meat as an essential part of their cultural identity.

In Ulsan, Korea, and other contexts where eating whale meat is viewed as a social justice issue, the environmentalists' preferred solution of outlawing whale meat consumption is not feasible, as illustrated by local reactions to the moratorium on commercial whaling. A more optimal strategy to mitigate

human predation on whales is to design interventions which are compatible with the existing cultural models of whales and whaling. Future policies should be designed after a complete analysis and extensive consultation with local community members, as well as with marine biologists, law enforcement agents, whale meat retailers and other stakeholders.

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