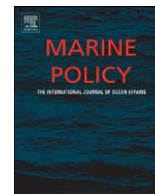




Contents lists available at ScienceDirect

## Marine Policy

journal homepage: [www.elsevier.com/locate/marpol](http://www.elsevier.com/locate/marpol)

## Whaling and its controversies: Examining the attitudes of Japan's youth

Julia Bowett <sup>\*,1</sup>, Pete Hay <sup>2,3</sup>

School of Geography and Environmental Studies, University of Tasmania, Private Bag 78, Hobart, TAS 7001, Australia

## ARTICLE INFO

## Article history:

Received 20 August 2008

Received in revised form

27 February 2009

Accepted 27 February 2009

## Keywords:

Whaling

Attitudes

Japanese students

Opinion surveys

## ABSTRACT

This article presents the results of a survey examining the attitudes of young Japanese people towards whaling and its controversies. Using an online and paper-based questionnaire, 529 useable surveys were completed by Japanese students (between 15 and 26 years old) from May to December 2007. Factorial analysis, correlation and regression models were used to identify relational predictors underlying the attitudes of young Japanese people on whaling issues. An approval of whaling exists amongst the participating students, with two constructs standing out as contributing the most to this affirmation; firstly, an approval of the consumption of whalemeat by Japanese children; and secondly, an acceptance of the pro-whaling rhetoric commonly produced by the Government of Japan (GOJ) and associated media. This research represents an initial exploration into the attitudinal structures of Japanese students on whaling issues, contributing to a deeper understanding of the complexities that surround the debate.

© 2009 Elsevier Ltd. All rights reserved.

## 1. Introduction

The International Whaling Commission (IWC) was established by 15 states in 1948 to implement the International Convention for the Regulation of Whaling (ICRW) of 1946, the latter having been created to halt the overexploitation of certain species of whales. The main objectives of the IWC were “to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry” [1]. Reflecting this statement and the values that saw natural resources largely in terms of their functional use for humans, the IWC bore witness to indiscriminate exploitation of many species and stocks of whales by a variety of whaling nations [2]. Emerging from an era that is today known as the “Whaling Olympics” of the 1950s and the early 1960s, in the mid-1960s a change in focus from the sustainable use of whales towards the conservation of whales developed in the IWC. This shift coincided with a substantial change in the IWC's composition (notably an increase in the number of non- and anti-whaling nations that sought and achieved membership), the rise of environmental movements in the West, a transformation in public attitudes towards whales and whaling, and a decrease in demand for cetacean products, mainly

oil and other lubricants by the industrial and defence sectors. In 1982, and consequential to these changes, the IWC introduced a moratorium on commercial whaling, with a three-quarter majority voting to set catch limits at zero, effective from the 1985/1986 whaling season. The moratorium remains in force today. With this normative shift in the mission of the IWC (from an organization originally established to regulate the development of the whaling industry and protect the price of whale oil to one that is officially dedicated to the protection of whales [3,4]) Japan, as one of the most active of the whaling nations, was left out in the proverbial cold. Since the establishment of the moratorium, the debate over whaling has become even more fiercely contended, and is now one of the world's most high-profile environmental issues. Arguments voiced by anti- and pro-whaling groups have changed little over the years. Pro-whalers in Japan have backed their arguments by:

- *cultural* claims—Tokyo has demanded at the IWC that Japan's four coastal communities at Abashiri, Ayukawa, Taiji and Wadaura be given rights similar to the “aboriginal subsistence whaling (ASW)” rights that indigenous communities in the Arctic are accorded;
- *social* claims—Tokyo maintains that these communities have traditionally depended on what is known as small-type whaling and that the activity of hunting as well as the processing of the animal is important in maintaining the social integrity and identity of the community;
- *scientific* claims—The Government of Japan (GOJ) has argued that the purpose of scientific whaling is to establish a system

\*Corresponding author. Tel.: +61 437720339.

E-mail addresses: [tjbowett@utas.edu.au](mailto:tjbowett@utas.edu.au) (J. Bowett).[Peter.Hay@utas.edu.au](mailto:Peter.Hay@utas.edu.au) (P. Hay).<sup>1</sup> Primary author.<sup>2</sup> Secondary author.<sup>3</sup> Tel.: +61 3 6226 2836; fax: +61 3 6226 2989.

for the conservation and management of minke, Bryde's, sei, and sperm whales [5];

- *sustainability* claims—Tokyo maintains that most whale stocks have recovered to a degree sufficient for sustainable harvesting provided the “Japanese-style” whaling method of full whale carcass utilization occurs [6].

Anti-whaling proponents have long advanced arguments that are sourced to animal welfare and other ethical criteria, viewing whaling as uncivilized, barbaric and cruel [7], as well as citing the “unscientific” nature of lethal sampling [8] and the potential dangers surrounding the hunting of some cetacean species whose population structures are still unknown.<sup>4</sup> Currently, Japan is whaling for “scientific purposes” in the context of a “Japanese Whale Research Program under Special Permit in the Antarctic” (JARPA), and since 1994 in the context of a corresponding program for the Northwest Pacific (JARPN),<sup>5</sup> in accordance with Article VIII.1 of the ICRW,<sup>6</sup> whilst also maintaining small scale coastal whaling, hunting species not subject to the ICRW<sup>7</sup> (Baird's beaked whales and pilot whales).

With the IWC often embroiled in arguments and accusations over such issues as “vote-buying” through the deployment of overseas development aid, secret balloting,<sup>8</sup> cultural imperialism,<sup>9</sup> and scientific misrepresentation, a climate of large-scale distrust and miscommunication has been created. Acknowledging the dysfunctional nature of the growing schism between anti- and pro-whaling nations, an intersessional IWC meeting was convened in 2008,<sup>10</sup> the purpose of which was not to negotiate the issues that are the fulcra of disagreement within the IWC, but simply to learn how to communicate with one another once again. With the polarization of the IWC, the moratorium is likely to remain in place for the foreseeable future, needing a three-quarter

majority to be overturned, and with communications at their worst since the moratorium's installation it is clear that different approaches are needed if this international environmental issue is to be resolved and the IWC is to again function effectively.

Several authors have suggested that the controversy is not based upon whether or not whaling is sustainable<sup>11</sup> but stems from first-principle discord over whether or not whales should be viewed as consumable resources, and whether whaling is morally acceptable [18–20]. Several opinion surveys have been conducted that examine these contentions in both non-whaling (Australia, United Kingdom, Germany, United States) and whaling (Japan, Norway) countries. In 1992, Freeman and Kellert reported that in the non-whaling countries listed above the majority of the public disapproved of the consumption of whalemeat (93, 93, 79, and 88 percent, respectively) and of whaling itself, even if properly regulated (66, 64, 60, and 55 percent, respectively); but in Japan and Norway less than half the public disapproved of the consumption of whalemeat (41 and 39 percent, respectively), with the majority approving of whaling for human consumption (55 and 63 percent, respectively) and of properly regulated whaling (64 and 74 percent, respectively) [21].

More recently, Greenpeace Japan commissioned its own Japanese public opinion polls on whaling attitudes.<sup>12</sup> The 2006 poll found that 69 percent of Japanese did not support whaling in the high seas, 78 percent were unaware that the seas around Antarctica are a declared whale sanctuary and over 95 percent of Japanese rarely, have not for a very long time, or never eat whalemeat [22]. In 2008, Greenpeace Japan conducted a similar poll<sup>13</sup> to their 2006 poll showing that 44 percent of respondents neither agreed nor disagreed with the resumption of commercial whaling, whilst 31 percent agreed “pro” and 25 percent disagreed “anti” [23]. In addition, questions were asked about where the respondents thought whaling should or should not be carried out; resulting in 40 percent of the “pro” whaling group answering “whaling should be conducted along the Japanese coast but not the high seas”.

In a 2008 survey conducted by the newspaper *Asahi Shimbun*, 56 percent of the Japanese population supported eating whalemeat with 26 percent opposed. The newspaper found that males in their forties and older had the highest ratio of support for the use of whalemeat for food (approximately 80 percent), while the ratio of support for the use of whalemeat for food was lowest amongst women in their twenties and thirties—58 percent and 41 percent, respectively [24].

Surveys that have examined whaling attitudes have focused mainly on adults. Few have specifically targeted younger people, with research into the attitudes of young Japanese people on issues related to whaling conspicuously lacking. This paper reports results of a survey-based study undertaken to explore the attitudes of Japanese university students on whaling and whaling issues. Given the relatively fast pace at which the whaling debate is evolving, the information obtained has predictive value

<sup>4</sup> Notably the North Pacific humpback whale, whose population estimate within a 95 percent confidence limit is still unknown. <<http://www.iwcoffice.org/conservation/estimate.htm>> accessed 7th January 2008 [9].

<sup>5</sup> In 2002, JARPN was extended to JARPN-II; similarly, JARPA was expanded by a second phase in 2005 named JARPA-II. From 2008 onwards, the catch quota from both programs will yield up to 1415 whales annually [10], consisting of 935 minke (*Balaenoptera acutorostrata* and *B. bonaerensis*), 50 fin (*Balaenoptera physalus*) and 50 humpback whales (*Megaptera novaeangliae*) in JARPA-II; and 220 minke, 50 Brydes (*Balaenoptera edeni*), 100 sei (*B. borealis*) and 10 sperm whales (*Physeter macrocephalus*) in JARPN-II. In the 2007/8 season, however, the 50 humpbacks were not taken.

<sup>6</sup> Article VIII.1 of the ICRW allows “Contracting Governments” to issue special permits to its nationals for whaling for scientific purposes. Such catches are not subject to IWC control.

<sup>7</sup> The 1946 Convention does not define a “whale”, although a list of names in a number of languages of a dozen whales was annexed to the Final Act of the Convention. Some governments, including Japan, take the view that the IWC has the legal competence to regulate catches only of these named great whales, whilst others believe that all cetaceans, including the smaller dolphins and porpoises, also fall within IWC jurisdiction. <<http://www.iwcoffice.org/conservation/smallcetacean.htm#small>> accessed 2nd January 2008 [11].

<sup>8</sup> The proposal of voting secretly on matters of substance is relatively new and has yet to be adopted by the IWC. In 1997, Japan argued that the Rules of Procedure should be changed to allow for secret balloting, suggesting that it has become necessary to move away from transparency, “to protect the sovereign rights of contracting governments in the democratic process... Governments [are] being subjected to undue pressures” [12].

<sup>9</sup> There is a widespread view in Japan that the international criticism of Japan's whaling practice is a form of “Japan bashing” that reflects cultural imperialism [13]. This has created the view that Japan is a victim of western cultural imperialism and is reflected in strong nationalistic sentiments within Japanese whaling rhetoric [14].

<sup>10</sup> The purpose of this meeting was not to “launch into negotiations on substantive issues where major differences among IWC members exist”; it was instead deemed that it would be “more fruitful to take a process-orientated approach and to seek ways to improve how negotiations within the IWC are conducted”. (Draft Agenda for London Intersessional Meeting March 2008: accessed 2nd April 2008 <[http://www.iwcoffice.org/\\_documents/commission/future/IWC-M08-1.pdf](http://www.iwcoffice.org/_documents/commission/future/IWC-M08-1.pdf)>) [15].

<sup>11</sup> Although a number of member countries agree that some whale species (e.g. minke whales) are abundant enough to resume commercial whaling in a scientifically sustainable manner [16], delegates of some anti-whaling nations (for example, New Zealand and the United Kingdom) have declared that they would object to the resumption under any circumstances because they do not consider whales to be a consumptive resource and deem commercial whaling immoral [17].

<sup>12</sup> The 2006 Greenpeace poll consisted of a sample size of 1047 randomly selected males and females between the ages of 15 and 59 years old. Data were collected via the Internet from Internet panels registered with Nippon Research Center, Ltd between 2nd and 9th June 2006.

<sup>13</sup> The 2008 Greenpeace poll consisted of a sample size of 1051 randomly selected males and females between the ages of 15 and 59 years old. Data were collected using the same method as outlined above between 18th and 23rd January 2008.

for how the wider Japanese population might come to regard whaling in the near future. It is also hoped that the insights offered by this paper will contribute positively towards whaling diplomacy.

## 2. Methodology

The study asked the following questions:

- (1) What factors determine the attitudes of young Japanese people to whaling issues?
- (2) Of these factors, which make the most significant contribution to the positions on whaling held by Japan's young people?

A survey was designed to cover a range of whaling issues, including cultural, economic, ethical, scientific, and social aspects. Students were also asked about personal experience with whale products. In addition, the survey sought to measure the impact of recent Japanese pro-whaling rhetoric on younger Japanese people. Since the 1982 moratorium, official Japanese pro-whaling rhetoric has steadily increased in intensity. Featured in this pro-whaling discourse are the “cultural imperialism” argument, the “whales eat too many fish” argument,<sup>14</sup> the “non-whaling countries use emotion instead of science” argument, and the argument that portrays Japan as a “victim” of non-whaling countries’ failure to understand Japan’s whale-eating culture. A series of questions that specifically targeted these pro-whaling sentiments were contained within the survey.

The questionnaire was distributed to various Japanese universities in Honshu, Kyushu and Hokkaido and was carried out between April and December 2007. Two different distribution methods were employed. Initially, the survey was available online from a University of Tasmania website. Contact was made with a number of academics at various Japanese universities inviting them to participate in the project. If a positive response was received by the authors, the website, complete with survey, was sent to those academics with a request that they forward the website to their students. The survey was available in both English and Japanese. After approximately three months the number of useable surveys was low ( $n=88$ ), yielding a 58.3 percent response rate from the number of hits on the website.<sup>15</sup>

In response to this disappointing outcome a second strategy was developed. The questionnaire was printed as a booklet and Japanese academics were asked to physically distribute the booklet to their students. The students completed the booklet within class or returned it at the next class. There were 550 booklets distributed, with this method yielding an 80.1 percent response rate ( $n=441$ ). The online website and booklet responses combined constituted 529 usable survey completions. Participants responded to statements on a 5-point Likert scale (from 2: strongly agree; 0: neither agree nor disagree; to -2: strongly disagree). Demographic information was sought about

gender, age (15–20, 21–26), prefecture of birth, prefecture where the respondent now spends most time, and university name. For the purposes of this paper, findings are reported in only age and gender dimensions.

The structure of the analysis in this paper is similar to the format presented by Hamazaki and Tanno (2001) [20] who performed exploratory statistical analyses on the whaling public opinion survey of Freeman and Kellert (1992) [21]. The present work augments that appraisal of whaling attitudes in Japan by focusing on younger Japanese people.

In order to obtain a baseline understanding of any underlying concepts within the questionnaire responses an exploratory factor analysis (EFA) (principal component analysis with Varimax rotation) was applied. The EFA identified five constructs:

- approval of whaling;
- intangible motivations of whaling;
- whale conservation;
- maintaining the whaling industry;
- and, acceptance of pro-whaling rhetoric.

A sixth construct, the *approval of the consumption of whalemeat by Japanese children*, was created by calculating the mean scores of two questionnaire statements relating to this topic. Mean scores were also calculated for the remaining five constructs.

### 2.1. Results: approval of whaling

Two factors emerged from the initial EFA indicating positive attitudes to whaling amongst Japanese students (Table 1). All questions with the exception of Q11<sup>16</sup> loaded on the first factor, with this factor explaining 45 percent of the variance. Several of the questions were anti-whaling and needed to be reverse coded (questions 4, 5, 6, 8, 9, 10, 12, and 13) to allow the analysis to focus specifically on positive attitudes to whaling.

The second factor explained 10 percent of the variance and consisted of Q11 and cross-loading questions 5, 8, 12, and 13. Of interest are the items that make up this second component. The positively loaded items are all associated with anti-whaling, sentiments which contrast with Q11, which is negatively loaded ( $-0.828$ ). This factor highlights the bifurcation between pro- and anti-whaling attitudes. However, investigation with Q11 removed from the analysis resolved to only one factor therefore suggesting that Q11 is the major force in the development of the second factor. For the purposes of this paper only the first factor is used in further analysis as it best represents a positive whaling construct. The Kaiser–Meyer–Olkin (KMO) value was 0.911, identifying the data set as suitable for factor analysis based upon the greater than 0.6 rule for a KMO [29]. The Bartlett’s test of sphericity was significant ( $<0.05$ ), also supporting this data set’s suitability for factorial analysis [29].

The Japanese students did not differentiate between purposes of whaling, such as for cultural and social motivations, or economic and scientific needs (Table 1<sup>17</sup>). In terms of our analysis, we named this factor *approval of whaling* using Hamazaki and Tanno’s (2001) [20] definition: “approval of regulated whaling for non-endangered whales.” This concept became a dependent variable in a regression analysis, with the rest of the identified concepts (discussed below) treated as predictor variables.

<sup>14</sup> Numerous media releases from the Institute of Cetacean Research (ICR) and Fisheries Agency (FA) cite the need for lethal sampling of whales “to collect data on the competition between whales and fisheries” [25] and frequently claim that the consumption of marine resources by whales is 3–5 times that of human consumption [26,27]. Pro-whaling rhetoric within these and other releases repeatedly refers to this issue as one of importance to “World Food Security” [28].

<sup>15</sup> Although the response rate was high, the number of hits to the website containing the survey was low (151). Possible reasons why the website received only a small number of hits include: the invitational e-mail being mistaken for spam mail by Japanese recipients, logistical problems consequent upon trying to coordinate a low budget survey from overseas, and Japan’s deep-rooted culture of hierarchy, wherein cooperation occurs mainly within already established relationships.

<sup>16</sup> Q11 asked: “To what extent do you agree or disagree with the following statement: ‘Aboriginal subsistence whaling should be allowed when based on traditional, cultural, and dietary needs’.” Participants were given background information on ASW prior to answering this section.

<sup>17</sup> The factor loadings in the third column show the changes in loadings that exists in component 1 when Q11 is excluded from analysis.

**Table 1**  
Varimax factor loading for the statements for the approval of whaling construct.

To what extent do you agree or disagree with the following statements?		Factor loadings		
		1	2	3
1.	Whaling is part of Japanese culture and should be allowed to continue	0.791		0.762
2.	If a whale species is not endangered, small coastal communities in Japan, who previously hunted these animals, should be allowed to return to whaling	0.787		0.687
3.	Whales that are not endangered can be killed to provide food for humans	0.743		0.762
4.	I am opposed to the hunting of whales under any circumstances	0.735		0.785
5.	I cannot imagine why anybody would want to kill anything as wonderful as a whale	0.696	0.350	0.776
6.	Aboriginal subsistence whaling (by Aboriginal, native or Indigenous peoples) should be banned	0.681		0.667
7.	There is nothing wrong with harvesting whales if whaling is managed under strict international regulations	0.669		0.667
8.	Commercial whaling should be banned	0.611	0.448	0.731
9.	Scientific whaling should be banned	0.600		0.655
10.	Whaling has been part of Japanese culture, but is no longer necessary as part of modern-day Japanese society	0.575		0.604
11.	Aboriginal subsistence whaling should be allowed when based on traditional, cultural and dietary needs		−0.828	–
12.	Only non-lethal methods should be used to conduct scientific research on whales	0.335	0.597	0.530
13.	If it is possible, whale watching should replace whaling in whaling towns	0.526	0.584	0.701
Percentage of variance explained		45	10	48.7
Cronbach $\alpha$		0.88	n/a	0.90

Note: All factor loadings reported above were obtained after reverse coding of questions 4, 5, 6, 8, 9, 10, 12, and 13.

**Table 2**  
Varimax factor loadings for statements representing the objectives of the IWC.

How important or unimportant do you consider the following goals when whaling policy is being established?		Factor loadings		
		1	2	3
1.	Cultural goals (maintaining whaling by Aboriginal subsistence communities)	0.904		
2.	Social goals (maintaining jobs and the well-being of local people in coastal communities)	0.879		
3.	Environmental goals (protecting whales and their habitat from marine pollution or industrial activity)		0.828	
4.	Animal welfare concerns (considering the pain and suffering of whales when they are killed)		0.699	
5.	Ecological goals (the roles whales have in ocean ecosystem management)		0.661	
6.	Economic goals (maintaining a profitable commercial whaling industry)			0.876
7.	Resource-use goals (maintaining supplies of whale products for human consumption)			0.837
Percentage of variance explained		34.7	21.3	14.4
Cronbach $\alpha$		0.82	0.51	0.69

## 2.2. Results: objectives of the IWC

A series of statements in the survey asked the participants to consider the importance of various goals during the formulation of whaling policy (Table 2). These statements were also representative of the objectives of the IWC: “to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry”.

Again using EFA, three factors emerged in this suite of questions (Table 2). The statements that loaded on the first factor emphasized the cultural and social goals of whaling, and we named this factor the *intangible motivations for whaling* (the maintenance of whaling based on non-material human benefits). The second factor emphasized not only the conservation of whales, but also placed emphasis on the welfare of the whales themselves (via animal welfare and the environmental and ecological role of whales). We named this factor the *whale conservation objective* (conservation of whales from a whale-centered perspective). The third factor emphasized economic and resource-use goals, a human-centered perspective. We named this factor the *maintaining the whaling industry objective* (sustaining the whaling industry on economic criteria).

Both the KMO (0.631) and the Bartlett's test of sphericity ( $<0.05$ ) identified the data set as being suitable for factor analysis based upon Pallant [29]. A low Cronbach's alpha score was obtained by Factor 2 (0.51); this, however, is reported to be a common occurrence with scales fewer than 10 items [29].

## 2.3. Results: acceptance of pro-whaling rhetoric

A number of statements were included in the survey that asked the participants to report the degree of their acceptance of the rhetoric of pro-whaling advocates (in particular that of the GOJ) that has increased in volume since the moratorium on commercial whaling (Table 3). When associated statements were factor-analyzed only one factor emerged.

Again, an acceptable KMO (0.846) and Bartlett's test of sphericity ( $<0.05$ ) was obtained, identifying this data set as being suitable for factor analysis in accordance with Pallant [29].

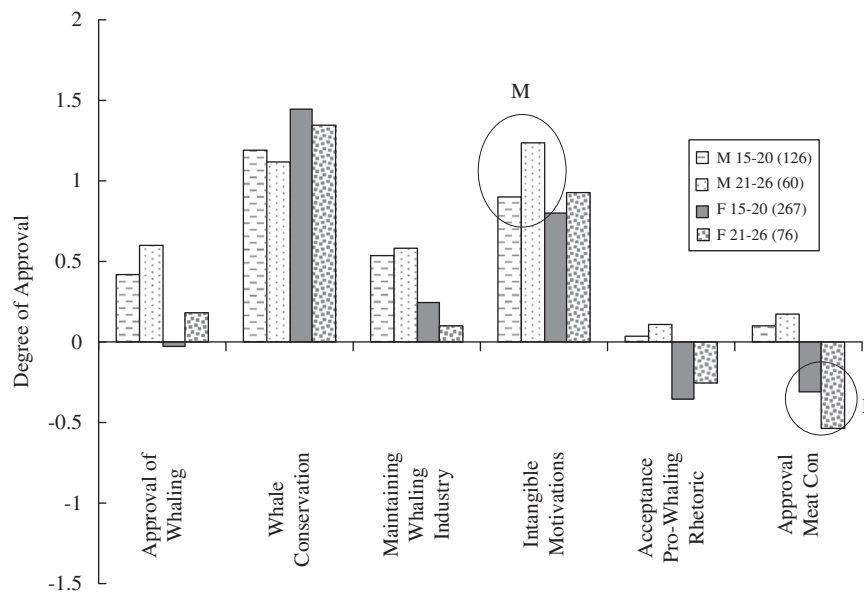
The Cronbach's alpha scores for all of the factorial analyses in the study (excluding Factor 2, Table 2) were above 0.7, indicating that the internal consistency of the constructs were adequate in accordance with DeVillis (2003) [30].

## 3. Inferential statistics of the whaling constructs

*Males:* On examining the means for the male participants, approval of whaling increased with age (Fig. 1). The corollary also applied: a decrease in the *whale conservation objective* was observed. For males, increases were also observed in the four other constructs with increasing age, with the largest difference between the two age categories being the *intangible motivations for whaling* construct highlighted in Fig. 1.

**Table 3**  
Varimax factor loadings for the acceptance of pro-whaling rhetoric.

To what extent do you agree or disagree with the following statements?		Factor loadings 1
1.	Some countries that oppose whaling are treating Japan unfairly	0.799
2.	Countries that oppose whaling do so because they do not understand Japan's whaling culture	0.775
3.	Countries that oppose whaling are misinformed about whaling issues	0.765
4.	Countries that oppose whaling do so because they are racist towards Japanese people	0.741
5.	Countries oppose whaling because they want to impose their whale conservation policies upon Japan	0.728
6.	People in non-whaling countries use emotion more than scientific data to support anti-whaling campaigns	0.708
7.	Whaling is a traditional activity that I associate with Japan	0.526
8.	Certain whale species are decimating fish stocks and must be killed to ensure there is a plentiful supply of fish for humans	0.437
Percentage of variance explained		48.38
Cronbach $\alpha$		0.847



**Fig. 1.** Calculated means scores of Japanese students' attitudes on whaling. (Note: The degree of approval/ disapproval represents the 5-point Likert scale used in the survey denoting 2: strongly agree, 0: neither agrees nor disagrees, to -2: strongly disagree.  $n=529$ ; individual cohort sizes in brackets).

*Females:* Approval of whaling also increased from the lower to the higher age categories in the case of the female participants (although this was less than in the case of the males). Again, the corollary applied: a decrease in concern for whale conservation was also seen as the females grew older. In addition, the older female participants viewed whaling for cultural and social purposes to be of greater importance than did their younger counterparts (Fig. 1). The largest difference between the two age categories was for the approval of the consumption of whalemeat construct (Fig. 1).

A difference between the genders existed when examining the results to the maintaining of the whaling industry construct. Female responses decreased in their approval of whaling for the benefit of the whaling industry, whereas those of males increased.

Interesting to note are the means obtained for the acceptance of pro-whaling rhetoric. Overall, females disagreed with statements related to pro-whaling rhetoric; however, the level of disagreement for older females was less than that of their younger peers. Males were more accepting of pro-whaling rhetoric, and they became more accepting as they grew older (Fig. 1). The two genders differed entirely in their responses to statements relating to the approval of the consumption of whalemeat by Japanese

children. Females did not approve of whalemeat consumption, with the older females having a greater degree of disapproval. Males did approve of whalemeat consumption, with this approval increasing with age (Fig. 1).

### 3.1. Contributions of related elements associated with students' attitudes about whaling

Table 4 explores the relationship among the five predictor construct variables where a Spearman coefficient correlation was used. The analysis indicated that the whale conservation construct had a low but positive correlation to the maintaining the whaling industry ( $r=0.065$ ) (not significant) and intangible motivations for whaling ( $r=0.187$ ) constructs but low negative correlations to the acceptance of pro-whaling rhetoric ( $r=-0.172$ ) and the approval of the consumption of whalemeat ( $r=-0.178$ ) constructs. All other correlations were positive and significant, with the highest correlation between the acceptance of pro-whaling rhetoric and approval of the consumption of whalemeat constructs ( $r=0.524$ ).

Table 5 examined the degree to which approval of whaling was correlated with other elements using a multiple regression model

**Table 4**  
Spearman correlation coefficient ( $r$ ) among the construct variables.

	Objectives of the IWC		Intangible motivations	Acceptance pro-whaling rhetoric	Approval whalemeat consumption
	Whale conservation	Maintaining whaling industry			
Whale conservation		0.065	0.187 <sup>(a)</sup>	−0.172 <sup>(a)</sup>	−0.178 <sup>(a)</sup>
Maintaining whaling industry			0.356 <sup>(a)</sup>	0.318 <sup>(a)</sup>	0.417 <sup>(a)</sup>
Intangible motivations				0.329 <sup>(a)</sup>	0.295 <sup>(a)</sup>
Acceptance pro-whaling rhetoric					0.524 <sup>(a)</sup>

<sup>a</sup> Correlation is significant at the 0.01 level (2-tailed).

**Table 5**  
Standardised multiple regression coefficients on approval of whaling.

Predictor variables	Dependent variable: approval of whaling
Female	−0.127 <sup>c</sup>
Age 21–26 years old	0.106 <sup>b</sup>
Whale conservation	−0.092 <sup>b</sup>
Intangible motivations whaling	0.172 <sup>c</sup>
Maintaining whaling industry	0.087 <sup>a</sup>
Acceptance pro-whaling rhetoric	0.213 <sup>c</sup>
Approval consumption whalemeat	0.398 <sup>c</sup>
F	90.53
R <sup>2</sup>	0.561

<sup>a</sup>  $p < 0.05$ .

<sup>b</sup>  $p < 0.01$ .

<sup>c</sup>  $p < 0.0001$ .

where *approval of whaling* (the dependent variable) was regressed on:

- the constructed variables identified using factor analysis;
- the approval of the consumption of whalemeat by Japanese children; and
- the demographic variables: age and gender.

Overall, the regression parameter that made the strongest unique contribution to explaining the approval of whaling (our dependent variable) was the *approval of the consumption of whalemeat* construct (0.398). However, it is notable that the *acceptance of pro-whaling rhetoric* construct also contributed positively to the overall approval of whaling by the students (0.213). In the regression, the *whale conservation* construct was negatively correlated with the *approval of whaling*, supporting the results from the Spearman correlation (Table 4). Though within an overall context of support for whaling, the negative parameter seen for females indicates that they nevertheless tended to disapprove of whaling more than males and those aged 21–26 were more likely to approve of whaling than those aged 15–20.

#### 4. Discussion

The controversy over whaling has been one of the most widely disputed environmental issues of our time, with several authors suggesting the source of the whaling controversy lies in differing perceptions of the ethical and aesthetic status of wildlife rather than the science of the industry's management [31,20].

This is supported by the results of this study. The positive correlation between the *approval of whaling* and *approval of the consumption of whalemeat* indicates that the students who view

whales as a resource for consumption also approve of whaling. When examining both the regression model and the inferential statistics, it is seen that males approve of whaling and of the consumption of whalemeat more than females, though the *approval of whaling* in both genders increases with age. When the *approval of whaling* construct is broken down into more specific categories, the categories that have the most impact on its affirmation are, firstly, the *approval of the consumption of whale meat* and, secondly, the *acceptance of pro-whaling rhetoric* as produced by both the GOJ and the Japanese media.

Whilst the correlation model shown in this study does not identify any causal relationships between the constructs, the regression model can predict the relationships between the six variables (plus the two demographic variables) when applied to a general population. For example, those who approve of the consumption of whalemeat by Japanese children or accept pro-whaling rhetoric will be more likely to approve of whaling. Some correlations observed in this study highlight some of the contentions over whaling whilst other correlations suggest that the difference is not only in attitudes to whaling, but also about whaling objectives, such as the IWC's *whale conservation* objective, *maintaining the whaling industry* objective, and what we have referred to as the *intangible motivations of whaling*.

As the IWC's whale conservation objective could be understood as either "for whaling: conserving whale stocks in the interests of the long-term sustainable maintenance of the industry" or "against whaling: conservation of whales from threats of whaling", it is understood that participants in this study might have interpreted it either way. However, while the first interpretation would complement the IWC's whaling industry maintenance objective, resulting in a positive correlation between the two objectives, the second interpretation would contradict this, resulting in a negative correlation. On examination of Table 4, there exists a very weak positive correlation; however, there is a negative correlation between the *whale conservation* construct and the *acceptance of pro-whaling rhetoric* and the *approval of the consumption of whalemeat*. This suggests that the students did indeed interpret the *conservation* objective in opposing ways. However, upon examining the regression model and observing the negative result that exists between the *whale conservation* objective and the *approval of whaling*, it seems reasonable to assume that the majority of the participants interpreted the objective as "against whaling". This is supported by the negative correlation seen in the regression model between the *whale conservation* objective and the *approval of whaling* (Table 5).

The *intangible motivations for whaling* construct that represented the maintenance of employment and well-being of local whaling communities as well as the maintenance of ASW for cultural purposes was supported by both genders, with greater support registered by the older students. This support could exist for a variety of reasons. Firstly, whaling is commonly viewed as an

important component of Japan's cultural heritage [32], with many Japanese believing that they have a distinct and unique whale-eating culture (*gyoshoku bunka*) [33]. Secondly, the Japanese public resents what it perceives to be Western interference in its own traditional behaviors, with a widespread view that international criticism of Japan's whaling practice is a form of "Japan bashing" that reflects cultural imperialism [33]. While it might be argued that the younger Japanese surveyed in this study would be relatively free of these cultural perceptions, the existence of these ideals in older generations and the structure of Eastern environmental values (combining traditional values based upon the honoring of parents and family security) will assist their transmission to younger generations of Japanese.

*Acceptance of pro-whaling rhetoric, gyoshoku bunka*, and the promotion of the cultural imperialism argument are often reinforced not only by the GOJ, but also by the Japanese media (where there is a robust critical sector, but it is far from mainstream). It has been documented that the Japanese media lack independence, with an over-close relationship with government [34] existing in the form of the *Kisha-Kurabu* (reporters' club) present in every ministry and government agency.<sup>18</sup> Murata (2007) [36] notes that articles about whaling in the Japanese press are written in a factual style (although "factual" can also disguise a presentation that is essentially "evaluative"), using non-emotive lexis tending to reflect official statements made by the GOJ. Many articles also attempt to convey a sense that whaling is not under threat and that it is not a contentious issue. In reporting on this "uncontentious" issue, Japanese journalists achieve two things: firstly, by making the pro-whaling discourse sound pre-eminently objective and logical they are more likely to convince their readers that the Japanese government's actions regarding this issue are justifiable; and, secondly, by not reporting on the cases produced within anti-whaling nations, the Japanese public is kept in the dark about why most of the rest of the world is opposed to the continuation of whaling. This content manipulation by the Japanese media, and its alignment with the government in its reporting, helps explain why an acceptance of pro-whaling rhetoric contributed significantly towards the approval of whaling by the Japanese students who participated in the study.

The results of the analyses presented allow us to answer the two research questions posed at the beginning of the paper. The EFA identified factors that underpinned an *approval of whaling* construct (Question 1). Our model, which identified six predictors from the statements posed to the students, explains 56.1 percent of the variance in the *approval of whaling* construct. Of these variables, two contributed the highest: these were the *approval of the consumption of whalemeat*, which made the largest single contribution (beta=0.398), and the *acceptance of pro-whaling rhetoric*, which also made a statistically significant contribution (beta=0.21) (Question 2).

Many authors have documented possible reasons (based on various facets of the cultural, social and ideological structure of Japanese thought) for the lack of support for anti-whaling values and further, the increasing strength of recent Japanese pro-whaling countermobilization. These reasons include:

- (1) The development of Japanese environmental movements that were deeply rooted in "the history of pollution" [37]. Widely publicized pollution events such as those leading to outbreaks of Minamata disease in the Shiranui Sea (midwest Kyushu island) and Niigata and *itai-itai* (ouch-ouch) disease in Toyama prefecture led to environmental movements that sought basic human rights and differed from a species *qua* species or

habitat *qua* habitat conservationist ethic as seen more in western environmental movements.

- (2) An economics-first ideology which is contrary to environmentalist values (preferences for economic growth and technological solutions to the problems of development).
- (3) A difference in environmental values between Asian and Western nations, the former being a blend of traditional concepts (e.g. honoring parents and family security) [38,39]. A nation with an older generation that remembers eating whalemeat post World War II will transcribe their values onto a younger generation.
- (4) The non-existence of anthropomorphic transformation of whales into "the superwhale": an image of "the whale" as an endangered, friendly giant, an intelligent, curious, socially complex animal [40], with whale species in Japan often being considered as fish (*uo-hen*) rather than marine mammals.
- (5) An increasing amount of pro-whaling rhetoric produced by the GOJ and its closely linked media promoting the rationality and objectivity of Japanese scientism over Euro-American emotionalism, emphasizing whaling culturalization, and "self-indigenizing" the importance of whaling for cultural needs [41].
- (6) A history of Confucianist thought that de-emphasizes democratic participation and thus sanctions the non-involvement of the Japanese public in whaling policy formation, which is controlled by a bureaucratic minority (the Japan Fisheries Agency of the Ministry of Agriculture, Forestry and Fisheries) within a highly centralized government [42,43].
- (7) Japan's domestic culture, and the political structures and financial restrictions imposed by the GOJ significantly constrain the activities of anti-whaling NGOs [44], and these compounds with public uneasiness brought on by environmental activism against whaling.
- (8) The securitization of whaling wherein Japanese officials portray opposition to whaling as an existential threat to both state sovereignty (constructed as the government's ability to provide food and resources for its people) and to the collective identity of Japan (constructed as Japan's whale-eating culture).

It is likely that many of the above reasons (as well as others not identified) contribute to the current support for whaling in Japan. If the results of this study are amenable to broader generalization, an approval of whaling also exists more widely among Japan's youth. The findings square with anecdotal evidence collected by the authors whereby many Japanese students residing in both Japan and Australia have stated that the hostility shown to Japan by anti-whaling nations and environmental groups has pushed them towards an acceptance of whaling. A "comments" section at the end of the questionnaire repeatedly highlighted the response of students not particularly interested in eating whalemeat themselves, but possessing what has been coined as an *anti anti-whaling sentiment*<sup>19</sup>, seeing Japan as a "victim" of western cultural imperialism, precisely the view generated by the GOJ and Japanese media. It may be that anti-whaling actors need to address the possibility that their activities could *increase* the acceptance of whaling amongst the youth of Japan.

<sup>19</sup> In the words of Junko Sakurai, a former Greenpeace Japan campaigner, the Japanese citizens who are said to be "pro-whaling" are largely "anti anti-whaling" in reality. J. Sakurai, e-mail communication with A. Ishii 31 July 2006. Cited in Ishii A and Okubo A. An Alternative Explanation of Japan's Whaling Diplomacy in the Post-Moratorium Era. *Journal of International Wildlife Law and Policy* 2007; 10: 55–87 [45].

<sup>18</sup> For a detailed explanation and analysis of the *Kisha-Kurabu* system, see [35].

## 5. Conclusion

This study supports the widely documented theory that the discourse over whaling stems from cultural differences in how whales are viewed rather than disagreements over the management detail of whale harvesting regimes. Furthermore, the results present new evidence that the continued pro-whaling rhetoric produced by the GOJ and associated media is having an impact on the approval of whaling amongst the participating Japanese students.

Ironically, it is the GOJ that frequently accuses anti-whaling advocates of being “too emotional” and therefore unable to make objective and “rational” decisions, especially within the IWC. However, the very crux of the whaling dispute could well be emotionally based; pride of the Japanese people in their whale-eating culture and an expression of patriotism. A link has already been observed between the memories of *gyoshoku bunka* from post World War II generations and the strong pro-whaling stance of these older generations. In a similar fashion, it is possible that younger generations with residual *anti* anti-whaling sentiment could well go on to become the next generation of pro-whaling advocates in Japan. The GOJ has a long-term plan for the continuation of whaling, having spent around 900 million yen (approximately 5.7 million Euro) yearly since 1988 on subsidizing scientific whaling programs [46]. Pro-whaling interests will rely on their own people to re-ignite the popularity of a whalemeat eating culture. If this occurs, Tokyo will be standing on firmer ground to push the cultural case for whalemeat eating.

## Acknowledgments

We are grateful to Milton Freeman and Stephen Kellert for the use of resources from the 1992 survey “Public Attitudes to Whales—Results of a Six-Country Survey”, to Bruce Allen, Isao Sakaguchi, and Richard Wilcox for their help with survey distribution, to Mayo Kajitani, Kumi Kato, and Hideki Okubo for their contributions to translation of the questionnaires, to Atsushi Ishii for his helpful comments on this paper, to Phil Patman with statistical analysis advice and to the *Undersea Explorer* for contributions to research funding.

## References

- [1] International Whaling Commission (IWC). International convention for the regulation of whaling 1946. Available on the Internet at <<http://www.iwcoffice.org/commission/convention.htm>>; cited 14 April 2008.
- [2] Mandel R. Transnational resource conflict: the politics of whaling. *International Studies Quarterly* 1980;24(1):99–127.
- [3] Stoett PJ. The international whaling commission: from traditional concerns to an expanding agenda. *Environmental Politics* 1995;4(1):130–5.
- [4] Miyaoka I. Legitimacy in international society: Japan's reaction to global wildlife preservation. Basingstoke, United Kingdom: Palgrave MacMillan; 2004.
- [5] Institute of Cetacean Research (ICR). Research plan for cetacean studies in the Western North Pacific under special permit (JARPN II) 2002. Available on the Internet at <<http://www.icrwhale.org/eng/AbstractSC5402.pdf>>; cited 7 January 2008.
- [6] Ohsumi S. Development of Japanese-style whaling to the Antarctic: its history and future. Learning from the Antarctic whaling. In: International symposium on commemorating the centennial of the Antarctic whaling, Tokyo, Japan, 2 December 2004. Institute of Cetacean Research, Tokyo, Japan; 2005. p. 82–99.
- [7] Kalland A, Sejersen F. Marine mammals and northern cultures. Edmonton, Alberta: Canadian Circumpolar Institute Press; 2005.
- [8] Gales NJ, Kasuya T, Clapham PJ, Brownell RL. Japan's whaling plan under scrutiny. *Nature* 2005;435:883–4.
- [9] International Whaling Commission (IWC). Whale population estimates 2007. Available on the Internet at <<http://www.iwcoffice.org/conservation/estimete.htm>>; Cited 7 January 2008.
- [10] Sand PH. Japan's 'research whaling' in the Antarctic Southern Ocean and the North Pacific Ocean in the face of the endangered species convention (CITES). *RECIEL* 2008;17(1):56–63.
- [11] International Whaling Commission (IWC) Website. Small cetaceans 2004. Available on the Internet at <<http://www.iwcoffice.org/conservation/smallcetacean.htm#small>>; cited 2 January 2008.
- [12] International Whaling Commission (IWC). Annual Report of the International Whaling Commission 48th Report 43; 1998.
- [13] Hirata K. Why Japan supports whaling. *Journal of International Wildlife Law and Policy* 2005;8:129–49.
- [14] Kalland A. The anti-whaling campaigns and Japanese responses 1998. Available on the Internet at <[http://www.luna.pos.to/whale/icr\\_camp\\_kal\\_land.html](http://www.luna.pos.to/whale/icr_camp_kal_land.html)>; cited January 7 2008.
- [15] International Whaling Commission (IWC). Intersessional meeting on the future of IWC. Draft agenda 6–8 March 2008. Available on the Internet at <[http://www.iwcoffice.org/\\_documents/commission/future/IWC-M08-1.pdf](http://www.iwcoffice.org/_documents/commission/future/IWC-M08-1.pdf)>; cited 2 April 2008.
- [16] Gambell R. The international whaling commission and the contemporary whaling debate. In: Twiss JR, Reeves RR, editors. Conservation and management of marine mammals. Washington DC: Smithsonian Institution; 1999. p. 179–98.
- [17] Aron W, Burke W, Freeman MMR. The whaling issue. *Marine Policy* 2000;24:179–91.
- [18] Motluk A. Blood on the water. *New Scientist* 1996;150(2035):12–13.
- [19] Sigvaldsson H. The international whaling commission, the transition from a 'Whaling Club' to a 'Preservation Club'. *Cooperation and Conflict* 1996;31(3):311–352.
- [20] Hamazaki T, Tanno D. Approval of whaling and whaling-related beliefs: public opinion in whaling and nonwhaling countries. *Human Dimensions of Wildlife* 2001;6:131–44.
- [21] Freeman MMR, Kellert SR. Public attitudes to whales—results of a six-country survey. Available from the Canadian Circumpolar Institute, University of Alberta, Edmonton, Canada; 1992.
- [22] Greenpeace Japan. Opinion poll on scientific whaling summary report 2006. Prepared by Nippon Research Center, Ltd. 15 June 2006. Available from the Internet at <<http://www.greenpeace.org/raw/content/international/press/reports/whaling-poll-japan.pdf>>; Cited 25th July 2008.
- [23] Greenpeace Japan. Opinion poll on research whaling summary report 2008. Prepared by the Nippon Research Center, Ltd. 14 February 2008. Available from the Internet at <<http://www.greenpeace.org/raw/content/international/press/reports/japanese-opinion-whaling-2008.pdf>>; cited 25 July 2008.
- [24] Asahi Shimbun. 56% support eating whale 2008. Available from the Internet at <<http://www.asahi.com/english/Herald.asahi/TKY200802080097.html>>; cited 14 February 2008.
- [25] Institute of Cetacean Research (ICR). Criticism of research program is anti-science 2002. Available from the Internet at <<http://www.icrwhale.org/eng/ANTISCIENCE.pdf>>; cited 18 July 2007.
- [26] Fisheries Agency (FA). Strong support for whaling 2002. Available from the Internet at <<http://www.icrwhale.org/eng/StrongSupport.pdf>>; cited 18 July 2007.
- [27] Institute of Cetacean Research (ICR). Japan welcomes outcome of meeting of World Fisheries Organization 2003. Available from the Internet at <<http://www.icrwhale.org/eng/FAO.pdf>>; cited 18 July 2007.
- [28] Fisheries Agency (FA). Japan tells world fisheries organization that consumption of fish by marine mammals threatens to undermine conservation efforts 2003. <<http://www.icrwhale.org/eng/fisheries.pdf>>; cited 18 July 2007.
- [29] Pallant J. SPSS Survival Manual. Crows Nest, 3rd ed.. Australia: Allen & Unwin; 2007.
- [30] DeVillis RF. Scale development: theory and application, 2nd ed. Thousand Oaks, California: Sage; 2003.
- [31] Derr M. To whale or not to whale. *Atlantic Monthly* 1997;280:22–6.
- [32] Nagasaki R. Fisheries and environmentalism. In: Public perception of whaling. Institute of Cetacean Research (ICR). Available from the Institute of Cetacean Research, Tokyo; 1994. p. 21–39.
- [33] Hirata K. Why Japan supports whaling. *Journal of International Wildlife Law and Policy* 2005;8:129–49.
- [34] McArthur I. Media portrayal of the cultural relationship between Australia and Japan. *Australian Journal of International Affairs* 2006;60(4):574–89.
- [35] Hall IP. *Cartels of the mind: Japan's intellectual closed shop*. W.W. Norton: New York; 1998.
- [36] Murata K. Pro- and anti-whaling discourses in British and Japanese newspaper reports in comparison: a cross-cultural perspective. *Discourse and Society* 2007;18(6):741–64.
- [37] McKean M. Environmental protest and citizen politics in Japan. University of California Press: Berkeley; 1981.
- [38] Watanabe M. Gendai no Nihon-jin no Shizen-kan: Seiyō tonō Hikaku (The Japanese view of nature in the modern era: a comparison with Westerners). In: Ito S, editor. Japanese view of nature. Kawade Publishers: Tokyo; 1995.
- [39] Aoyagi-Usui M, Vinken H, Kuribayashi A. Pro-environmental attitudes and behaviours: an international comparison. *Human Ecology Review* 2003;10(1):23–31.
- [40] Kalland A. Whale politics and green legitimacy: a critique of the anti-whaling campaign. *Anthropology Today* 1993;9(6):3–7.
- [41] Blok A. Contesting global norms: politics of identity in Japanese pro-whaling countermobilization. *Global Environmental Politics* 2008;8(2):39–66.
- [42] Danaher M. Public awareness of environmental issues in Japan. In: de Zapetnik ST, Jay JW, editors. East Asian cultural and historical perspectives. Alberta: Research Institute for Comparative and Cross-Cultural Studies; 1997. p. 17–34.

- [43] Wong A. *The roots of Japan's international environmental policies*. New York: Garland Publishing; 2001.
- [44] Hirata K. Beached whales: examining Japan's rejection of an international norm. *Social Science Japan Journal* 2004;7(2):177–97.
- [45] Sakurai J. Former greenpeace Japan campaigner. Personal communication with Atsushi Ishii 31 July 2006. Cited in Ishii A and Okubo A. An alternative explanation of Japan's whaling diplomacy in the post-moratorium era. *Journal of International Wildlife Law and Policy* 2007;10:55–87.
- [46] Ishii A, Okubo A. An alternative explanation of Japan's whaling diplomacy in the post-moratorium era. *Journal of International Wildlife Law and Policy* 2007;10:55–87.