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How Ethical Ideologies Relate to Public Attitudes Toward Nonhuman Animals: The Japanese Case

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Abstract

How ethical ideologies relate to public attitudes toward nonhuman animals is an increasingly prominent topic, yet it has been largely unstudied, particularly in Asian countries such as Japan. Using the Ethics Position Questionnaire (EPQ), Animal Attitude Scale (AAS), and Animal Issue Scale (AIS) in the present study, we examined how ethical ideologies and human demographics relate to public attitudes toward animals from a Japanese cultural perspective. The results of a questionnaire ($N = 900$) distributed throughout Japan indicate that public attitudes toward animals were positively associated with idealism and negatively associated with relativism. These findings are similar to those from China, but partly in contrast with those from the United States, where relativism was unrelated to attitudes toward animals. Our findings add to a growing recognition of how individual philosophy relates to public attitudes toward animals in Asian countries.

Keywords

idealism – relativism – human demographics – attitudes toward animals – Japan

Introduction

The Ethics Position Questionnaire (EPQ), developed by Forsyth (1980), measures individual ethical ideology. The EPQ is based on an individual's attitude toward ethics in relation to idealism and relativism (Wiid, Cant, & Van Niekerk, 2014). Idealism refers to the extent to which one considers that ethical behavior will lead only to positive results, while relativism refers to the degree to which individuals do not base their personal moral philosophies on universal ethical rules (Forsyth, 1980; MacNab et al., 2011). To date, a considerable number of investigators have used the EPQ to better understand the mysteriousness of idealism and relativism in terms of business-related ethical issues, such as ethical decision making (Barnett, Bass, & Brown, 1994; Ramasamy & Yeung, 2013), consumer ethics and markets (Al-Khatib, Stanton, & Rawwas, 2005; Erffmeyer, Keillor, & LeClair, 1999), as well as management control systems (Douglas & Wier, 2005).

As an important complementary perspective, ethical ideology was also used in the field of human-nonhuman animal relationships. There are some researchers who have investigated the role of idealism and relativism regarding public attitudes toward animals and animal research in the United States (mainly conducted in universities) (Galvin & Herzog, 1992a, 1992b; Nickell & Herzog, 1996; Wuensch & Poteat, 1998) and China (Su & Martens, 2017). Results from these studies demonstrate that support for animal rights and opposition to research on animals were positively associated with idealism in both countries. However, relativism was negatively related to Chinese people's attitudes toward animals, but was not related to American university students' attitudes toward animals in the southern United States (with the exception of Wuensch & Poteat's study showing a negative correlation between relativism and support for animal rights). Therefore, the question of how ethical ideologies, particularly ethical relativism, relate to attitudes toward animals in different countries needs to be answered.

A previous study showed that the relationship between ethical relativism and attitudes toward animals may differ between developed and developing countries (Su & Martens, 2017). However, we suppose, besides the different levels of development, other variables including the cultural difference, society condition, geographical location, human demographics, and people's awareness of animal welfare may also influence the correlation between ethical ideology and attitudes toward animals in different countries. Yet investigations on such correlations and their influential factors from a cross-cultural perspective are still lacking, although there is a growing need for such research because of people's increasing awareness of animal welfare. In the present study, we

selected Japan, a developed Asian country, because its development conditions are similar to those of Western countries such as the United States, but its culture is perceived as similar to culture in other Eastern countries such as China (De Visser, 2008; Kim, 2009; Phillips & McCulloch, 2005; Weber & Gerth, 1953).

The Japanese ethical ideology is largely influenced by its culture of Confucianism, Buddhism, and traditional Shintoism. Confucianism and Buddhism also influence Chinese people's ethical social values. Confucian and Buddhist values advocate harmony, humility, and magnanimous behavior (Tan & Chee, 2005), which are different than Western values that highlight human rights and freedom (Chung, Eichenseher, & Taniguchi, 2008). However, sacrificing animals in religious rituals to pray for a good harvest is a Chinese and Japanese tradition (Blakeley, 2003; Kondo & Sato, 1999). Therefore, it is plausible that Chinese and Japanese people's attitudes toward animals are more likely to be based on the specific benefits that can be derived from using animals. Collectivism also plays a significant role in influencing Japanese, as well as Chinese, people's ethical and social values.

Japanese and Chinese people's mentality, including their attitudes toward animals, is holistic. They focus attention on the situation in which animals are used and ascribe causality by reference to the relationship between animals and their situation. However, Western mentality about attitudes toward animals is analytic, focusing attention on animals themselves and ascribing causality based on rules about it (Norenzayan & Nisbett, 2000). Therefore, the fundamental attribution error is much harder to demonstrate with Japanese and Chinese people than with Western populations (Choi, Nisbett, & Norenzayan, 1999; Norenzayan & Nisbett, 2000). Compared to Chinese and Japanese people, American people are more individualistic, and their attitudes toward animals are more likely to have been formed by concern for animal well-being, rather than being based on the cost-benefit analysis (Wuensch, Jenkins, & Poteat, 2002). Hence, we hypothesized that the correlation between relativism and attitudes toward animals would be stronger in Japan and China than in the United States. Considering that the absolute nature of idealistic individuals' moral principles always has crucial implications for their concern for others, including animals (Park, 2005), we assumed that idealism may be positively related to people's concern for animal welfare in different countries.

Due to the commonly reported behavior of whaling, Japan is sometimes criticized by their Western counterparts (Davey, 2006; Hirata, 2005). Additionally, Japanese people are used to distinguishing private and public relationships. They often show strong attachment to companion animals, but not to wild animals or laboratory animals. Therefore, identifying Japanese people's authentic

attitudes toward animals and the potential predictors such as human demographics, traditional culture, as well as individual ethical perspectives, is of interest to help understand animal welfare in Japan.

The purpose of the present study was to investigate how ethical ideologies and human demographics relate to public attitudes toward animals from a Japanese cultural perspective. We also aimed to find out whether the correlation between ethical ideologies and attitudes toward animals is the same between Japan and other Western countries and to what extent the culture, social condition, and awareness of animal welfare influence these correlations. Human demographics (sex and age), religion, companion animal ownership, and meat consumption have been demonstrated to be important factors in attitudes toward animals (Kenyon & Barker, 1998; Loughnan, Haslam, & Bastian, 2010; Povey, Wellens, & Conner, 2001). In order to verify the reliability of these reports, we examined whether such variables also relate to attitudes toward animals among Japanese people.

Materials and Methods

Participants

Data were collected by an online questionnaire in 2016 in Japan. The online questionnaire was conducted via Rakuten Research, one of the biggest research companies in Japan, by means of simple random sampling (Tillé, 2006). A total of 900 participants (male: 49.6%, female: 50.4%) were obtained throughout Japan. These participants are representative of the Japanese population aged 20 years or older with respect to sex and age. Participants' demographic information is presented in Table 1.

TABLE 1 Demographics of respondents

	<i>N</i>	%
Sex		
Male	446	49.6
Female	454	50.4
Age		
20-29 years	61	6.8
30-39 years	262	29.1
40-49 years	312	34.7
50-59 years	157	17.4

TABLE 1 Demographics of respondents (*cont.*)

	<i>N</i>	%
60 years and older	108	12.0
Organization participation		
Improving the welfare of animals	38	4.2
Conservation of the natural environment	58	6.4
Improving human rights or health	61	6.8
Attitudes to religion		
Important	114	12.7
Unimportant	786	87.3
Main source of inspiration		
Buddhism	75	8.3
Judaism	1	0.1
Islam	4	0.4
Christianity	20	2.2
Taoism	2	0.2
Shintoism	23	2.6
Companion animal ownership		
Yes	248	27.6
No	652	72.4
Companion animal species		
Cat	75	8.3
Dog	135	15.0
Fish	48	5.3
Birds	24	2.7
Reptiles	14	1.6
Rodents	9	1.0
Meat-eating frequency		
Never	14	1.6
Once a week or less	65	7.2
2-3 days a week	297	33.0
4-6 days a week	349	38.8
Every day	175	19.4

Note: *N* = 900

Materials and Methods

Using the Human-Animal Interactions Questionnaire, we wanted to investigate how ethical ideology and human demographics are related to Japanese people's attitudes toward animals, as well as whether these correlations are influenced by culture and social conditions. Utilizing a standard translation/back-translation procedure, the English version of the questionnaire was translated into Japanese, and two Japanese-speaking researchers who had not seen the English version translated it back into English, independently. The translated versions of the questionnaire were thoroughly tested in order to assure comprehensibility and equivalence. The final re-translated version was also compared with the original wordings, to confirm the accuracy and the quality of the English translation. The comparison of the original and the re-translated version of the questionnaire did not yield major differences.

The questionnaire consisted of four sections. In the first section, participants provided demographic and personal information: sex; age; organization participation (animal protection, natural conservation, and human health); composition of household; attitudes to religion; their main source of spiritual inspiration; their meat consumption; and whether they had companion animals and, if so, which ones.

In the second section, the Ethics Position Questionnaire (EPQ) (Forsyth, 1980), which includes an ethical idealism subscale (10 items) and ethical relativism subscale (10 items), was designed to measure participants' idealism and relativism, respectively. Cronbach's alpha was 0.910 for the idealism scale and 0.890 for the relativism scale in this study. Typical items of idealism include "The existence of potential harm to others is always wrong, irrespective of the benefits to be gained" and "If an action could harm an innocent other, then it should not be done." Typical items of relativism include "There are no ethical principles that are so important that they should be a part of any code of ethics" and "Whether a lie is judged to be moral or immoral depends on the circumstances surrounding the action." Participants were asked to indicate their agreement or disagreement with each item using a nine-point Likert format ranging from 1 (completely disagree) to 9 (completely agree). A higher score on the idealism subscale indicates a greater belief that ethical behavior always leads to good results, while a higher score on the relativism subscale indicates a greater belief that moral decisions should be based on specific conditions rather than universal principles (Galvin & Herzog, 1992a).

The Animal Attitude Scale (AAS) (Herzog, Betchart, & Pittman, 1991), a commonly used measure of attitudes toward animals, was introduced in the third section of the questionnaire. Cronbach's alpha for the AAS in the present study was 0.833. The AAS scale consisted of 20 items scored from 1 (strongly disagree)

to 5 (strongly agree), 9 of which are reverse coded. The total score of the AAS indicates the extent of participants' attitudes toward animals, and a higher score means a greater concern for animal welfare.

In the fourth section, the Animal Issue Scale (AIS) (Meng, 2009), a 43-item instrument, was used to further measure individuals' attitudes toward animals. Cronbach's alpha for the AIS in the present study was 0.952. The 43 items were originally based on the major human concerns about our use of animals. These are the use of animals, disrupting animal integrity, killing animals, compromising animal welfare, experimenting on animals, changing animals' genotypes, harming animals to protect the environment, and harming animals for social purposes. Each concern was represented by approximately five questions. The questions were chosen to be of international, not regional concern, and to be mutually exclusive (Izmirli & Phillips, 2011; Phillips et al., 2012). Participants were asked to respond to statements using a five-point scale ranging from 1 (extremely acceptable) to 5 (extremely unacceptable). A higher score on AIS indicates a greater concern for animal welfare.

Procedure

Nine hundred responses were obtained from 1,087 people among a panel which included 14,197 people throughout Japan who had provided their e-mail addresses to Rakuten Research and received our invitation email with the hyperlink to our questionnaire. Participants were asked to visit the website of our questionnaire and click "submit" when they completed all the questions. In the questionnaire, we explained the purpose of our study (to know how people treat and interact with animals in their direct environment) to the participants and stated that all information they provided would be kept completely confidential, and that personal information would not be released to or viewed by anyone other than the researchers involved in this project. If they were interested in our research, they could start to fill in the questionnaire. Otherwise, they could reject or ignore our invitation. By filling in our questionnaire, participants could get some Rakuten Super Points as a reward.

Statistical Analysis

Data were analyzed with SPSS 24 statistical software. Data were either normally distributed or converted to a normal distribution by log10 transformation, and the Levene test showed homogeneity of variances. A simultaneous multiple regression analysis was performed to predict Japanese people's attitudes toward animals in relation to idealism, relativism, sex, pet ownership, cat ownership and meat-eating frequency. An alpha value of .05 was used for variables to be entered into the models. All the non-explanatory variables were removed automatically from the results (McDonald, 2009).

TABLE 2 The scores of the Animal Attitude Scale (AAS) and Animal Issue Scale (AIS)

	Sex (M±SD)		<i>t</i>	<i>p</i>	<i>d</i>	20-29 years (M±SD)
	Female	Male				
AAS	61.62±7.86	57.37±7.80	-8.16	< .001	0.54	58.80±8.87
AIS	156.01±22.99	144.51±24.65	-7.24	< .001	0.48	146.82±27.95

Note: *df* = 898.

Results

Scores of AAS and AIS

The average score of AAS in the present study was 59.51 (*SD* = 8.11) out of 100, and the average score of AIS was 150.31 (*SD* = 24.50) out of 215. Female participants showed higher scores on both AAS and AIS than their male equivalents (both $p < .001$). We did not find any significant differences across different age groups of participants regarding either the AAS score or AIS score. (See Table 2.)

EPQ

The participants' average score for idealism was 6.29 (*SD* = 1.17), while their average score for relativism was 5.56 (*SD* = 1.02). The score of female participants' idealism was higher than that of male participants ($p < .001$), but there were no significant sex differences in relativism. The idealism score of participants who were 20 to 29 years old was lower than those who were 30 years or older ($p < .001$), while the relativism score of participants who were 30 to 39 years old was higher than those who were 60 years or older ($p < .001$) (See Figure 1). Our results also showed that the participants' idealism scores were positively related to their relativism scores ($r = 0.357, p < .001$).

Predictors of AAS and AIS Scores

Human Demographics and Ethical Ideologies

There was a significant correlation between sex and attitudes toward animals. We did not find any significant correlations between age and participants' attitudes toward animals. Results showed that both idealism and relativism were significantly associated with participants' attitudes toward animals. Participants with higher idealism scores showed greater concern for animal

Age (M±SD)				F	p	η ²
30-39 years (M±SD)	40-49 years (M±SD)	50-59 years (M±SD)	60 years and older (M±SD)			
59.73±8.10	59.88±7.43	58.58±8.84	59.69±8.47	0.86	= .489	0.00
150.70±24.33	152.09±23.84	148.08±25.48	149.44±23.15	1.10	= .357	0.01

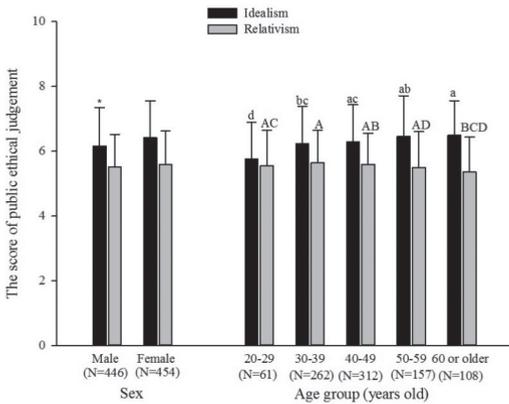


FIGURE 1 The scores for Japanese public ethical judgment. The asterisk indicates a significant difference between male and female respondents in idealism; a, b, c, and d indicate significant difference among age groups of respondents in the idealism scale; A, B, C, and D indicate a significant difference among age groups of respondents in the relativism scale.

welfare. However, participants with higher relativism scores showed less concern for animal welfare (Tables 3 & 4).

Other Predictors of AAS and AIS Scores

According to the multiple regression analysis, the scores of the AAS were also related to several other variables, including companion animal ownership, the companion animal species owned, and meat-eating frequency. Companion animal guardians had a higher AAS score than non-guardians. Participants who had a cat showed a higher AAS score than those who did not. Additionally, participants who never ate meat or only ate once a week scored higher than participants who ate meat two days a week or more (Table 3).

Based on the relationship between participants' AIS scores and the possible predictors, we found that the AIS score of companion animal guardians was higher than non-guardians. The meat-eating frequency was also associated

TABLE 3 Predictors of scores on the Animal Attitude Scale (AAS) in Japan

Y: The attitudes toward animals (<i>df</i> = 899)	Unstandardized Coefficients <i>B</i>	Standardized Coefficients Beta	Zero-order Coefficients	<i>t</i>	<i>p</i>
(Constant)	61.45			23.25	< .001
X ₁ : Ethical idealism	1.05	0.15	0.132**	4.61	< .001
X ₂ : Ethical relativism	-1.16	-0.15	-0.086**	-4.46	< .001
X ₃ : Sex: male (1)—female (2)	3.64	0.23	0.263**	7.29	< .001
X ₄ : Pet ownership: no (0)—yes (1)	1.54	0.09	0.194**	2.43	= .015
X ₅ : Cat ownership: no (0)—yes (1)	5.70	0.20	0.263**	5.54	< .001
X ₆ : Meat-eating frequency: once a week or never (1)—2 days a week or more (2)	-2.81	-0.10	-0.176**	-3.20	= .001

Note: Unstandardized and standardized coefficients refer to the partial effect of one predictor after adjusting for the others. $R^2 = 0.169$, Adj. $R^2 = 0.163$. Zero-order correlation test: ** $p < .01$.

TABLE 4 Predictors of scores on the Animal Issue Scale (AIS) in Japan

Y: The attitudes toward animals (<i>df</i> = 899)	Unstandardized Coefficients <i>B</i>	Standardized Coefficients Beta	Zero-order Coefficients	<i>t</i>	<i>p</i>
(Constant)	137.92			16.80	< .001
X ₁ : Ethical idealism	4.58	0.20	0.218**	6.49	< .001
X ₂ : Ethical relativism	-1.65	-0.07	0.011	-2.04	= .042
X ₃ : Sex: male (1)—female (2)	9.85	0.20	0.235**	6.34	< .001
X ₄ : Pet ownership: no (0)—yes (1)	5.38	0.10	0.141**	2.73	= .007
X ₅ : Cat ownership: no (0)—yes (1)	5.07	0.06	0.136**	1.58	= .114
X ₆ : Meat-eating frequency: once a week or never (1)—2 days a week or more (2)	-6.93	-0.08	-0.146**	-2.54	= .011

Note: Unstandardized and standardized coefficients refer to the partial effect of one predictor after adjusting for the others. $R^2 = 0.122$, Adj. $R^2 = 0.116$. Zero-order correlation test: ** $p < .01$.

with participants' AIS scores. The average AIS score was higher for participants who never ate meat or only ate once a week, than for participants who often ate meat (Table 4).

Discussion

This study investigated how individual ethical ideology and human demographics relate to public attitudes toward animals in Japan. The results showed that individual differences in idealism and relativism were significantly linked to attitudes toward animals. More specifically, the more that individuals endorsed their ethical behavior will lead to positive results, the more they appreciated animals; while the more that individuals emphasized their moral decisions should be based on situational analysis, the more they depreciated animals. This finding confirms a previous Chinese study reporting that public attitudes toward animals were positively related to idealism and negatively related to relativism (Su & Martens, 2017).

However, some previous studies of the correlation between ethical ideologies and American university students' attitudes toward animals have yielded a positive relationship with idealism, but no relationship with relativism (Galvin & Herzog, 1992a; Galvin & Herzog, 1992b; Nickell & Herzog, 1996). Considering that Asian people are more collectivistic and not concerned with foundations or universal laws, while Western populations are more individualistic and concerned with universal rules when explaining events (Norenzayan & Nisbett, 2000; Takano & Osaka, 1999), we think the correlation between relativism and attitudes toward animals is different between Western and Asian countries.

Human Demographics

In this study, we found that sex emerged as a statistically significant factor in relation to participants' attitudes toward animals, which parallels previous research conducted in Western countries showing that attitudes toward animals were more positive among women than men (Bowd & Bowd, 1989; Furnham, McManus, & Scott, 2003; Herzog, 2007; Martens, Enders-Slegers, & Walker, 2016; Walker, McGrath, Nilsson, Waran, & Phillips, 2014). These various findings collectively offer some additional insight regarding men's relatively low awareness of animal welfare and poor record of the concern for animal welfare. Compared to men, Japanese women are more other-centered and spend more time at home with their children (Grossman, 1998; Triandis, Chan, Bhawuk, Iwao, & Sinha, 1995). Therefore, women tend to use similar ways of treating their children to treat their companion animals (Erlanger & Tsytsarev, 2012).

We did not find any correlation between age and attitudes toward animals in Japan. This finding is inconsistent with previous findings from China, in which the young participants showed greater concern for animals than middle-aged and older ones (Su & Martens, 2017). One possible explanation is that the concept of animal welfare was accepted by Japanese people in 1970s and continues to influence people's attitudes toward animals in contemporary Japan (Bayne, Ramachandra, Rivera, & Wang, 2015; Niggli, 2007). It may be that, as a result, different age groups of participants developed a similar awareness of animal welfare and animal rights in Japan. However, animal welfare as a new phenomenon in China has attracted the attention of the younger generations, as a result of which they are more aware of it and express greater concern for it (Littlefair, 2006).

Ethical Ideology

Our results indicate that the correlation between relativism and attitudes toward animals is the same in Japan and China, but different between Japan and the United States, although both Japan and the United States are developed countries. We consider the cultural influence, geographical location, as well as people's awareness of animal welfare, might be the key drivers of the relationship between relativism and public attitudes toward animals in different countries.

Confucianism, a representative of the traditional culture and prevailing philosophy of many Asian countries, influences both Chinese and Japanese social values, including public attitudes toward animals. In Confucianism, humans are regarded as the lord of creation and animals can be sacrificed for the survival of human beings (Blakeley, 2003; Kondo & Sato, 1999). Japanese and Chinese people are more collectivistic than the Western population. They understand behavior in terms of complex interactions between dispositions of the object and contextual factors, whereas Western people often neglect the situational constraints and view behavior primarily as the direct unfolding of dispositions. Therefore, it is plausible that Chinese and Japanese people may think their attitudes toward animals (e.g., killing animals) should be based on situational analysis, which explains the influence of relativism on attitudes toward animals in these two countries.

In addition to Confucianism, Buddhism and traditional Shintoism also contribute to Japanese social values. The doctrines of Buddhism and Shintoism highlight the reciprocal care and compassion in relationships between humans and non-human animals (Kagawa-Fox, 2010; Kondo & Sato, 1999). However, Japanese people relate to animals emotionally and with little knowledge about animal characteristics, which directly leads to their lower awareness of animal

welfare (Miura, Bradshaw, & Tanida, 2000). The limited scientific knowledge about animal issues in Japan and China also result in their lower awareness of animal welfare, compared to their Western counterparts (Davey, 2006; Kellert, 1991). Therefore, considering the values of animal welfare, Chinese and Japanese people's attitudes toward animals might be depend more on their evaluation of the benefits, cost, and possible risks that animals bring to humans and society. Notably, the import of Western culture did contribute to Japanese society, including people's awareness of animal welfare. However, Western cultural values are not exhibited in the correlation between ethical relativism and attitudes toward animals in the present study.

Further analysis reveals that the higher the score of idealism, the greater the concern for animal welfare; while the lower the score of relativism, the higher the concern for animal welfare. These findings imply that the combination of the belief that one should apply universal moral principles and the belief that moral behaviors will lead to perfect achievements promotes the great concern for animal welfare (Su & Martens, 2017).

Other Predictors of Public Attitudes toward Animals

Our finding reveals that companion animal ownership (particularly cat ownership) was a significant predictor of attitudes toward animals, although companion animal ownership in Japan (34.3%) was lower than that in the United States (68.0%). This finding explains a previous study by Miura, Bradshaw, and Tanida (2002), who suggested that attitudes toward animals among the Japanese public largely focused on companion animals. Similar findings were also reported by Kagawa-Fox (2010), who demonstrated that Japanese companion animal guardians showed a strong attachment to their animals. In accordance with a previous study conducted in the UK reporting that meat consumption is morally troublesome, as it violates concerns for animal welfare (Loughnan et al., 2010), our result demonstrates that respondents who never eat meat or only eat once a week showed more concern for animal welfare than respondents who often eat meat. Concern about the treatment of animals might be the reason that participants ate less meat (Loughnan et al., 2010; Stockburger, Renner, Weike, Hamm, & Schupp, 2009).

Conclusion

Understanding the correlation between individual ethical ideology and attitudes toward animals is vital for improving people's awareness of animal welfare and sustainable human-animal relationships. The current study provides

evidence that Japanese people's attitudes toward animals were positively associated with idealism and negatively associated with relativism. Further, it provides evidence that sex was related to respondents' attitudes toward animals. The correlation between idealism and attitudes toward animals parallels previous studies in China and in the United States (Su & Martens, 2017; Wuensch & Poteat, 1998). Considering that idealistic individuals are concerned about others' welfare and believe in the absolute value of moral standards based on their unselfish concern for others (Park, 2005), it is not surprising that greater concern for animal welfare has always gone together with a higher level of idealism. Yet findings in relation to relativism differed between Asian and Western countries, in that in both Japan and China, relativism was negatively related to animal welfare attitudes, whereas in the United States, relativism was unrelated to university students' attitudes toward animals (Nickell & Herzog, 1996). We assume these different findings may be related to the different culture and different awareness of animal welfare between Asian and Western countries (e.g., the United States).

Japanese and Chinese people do respect animals, yet it appears that animals are assumed to have value because they are resources to satisfy human needs (Blakeley, 2003). Therefore, Chinese and Japanese people are considered to be more collectivistic, focusing attention on the contextual factors when explaining their attitudes toward animals. However, in the United States, the existence of animals might be regarded as more valuable than the benefits that they bring. As a result, the correlation between relativism and attitudes toward animals can be ignored. Given that the available studies in the United States were conducted in the universities, which could not fully represent the general American people, further studies with general respondents in the United States or other Western countries are therefore needed to confirm and clarify the relationship between ethical ideologies and attitudes toward animals.

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