# Differences in environmental attitudes between Russia and Japan

**Norimasa Takayama**, Forestry and Forest Products Research Institute, Japan, hanri@ffpri.affrc.go.jp; **Hajime Matsushima**, Hokkaido university, Japan; **Elena Petrova**, Moscow State University, Russia; **Hirofumi Ueda**, Sapporo City University, Japan; **Toshihiro Nakajima**, Chiba University, Japan; **Katsunori Furuya**, Chiba University, Japan; **Yoji Aoki**, Japan

## Introduction

Thoughts for natural environments should be decided by many factors. Therefore, knowing what residents in other countries think about the natural environment can be very useful for understanding each other's countries comprehensively. However, it seems to be rear that studies discussed and arranged about the causes from a quantitative point of view, which would bring the commonalities or differences, after having clarified commonalities and differences in way of thinking. Within this context, we conducted several experiments to investigate Japanese and Russian attitudes toward the natural environment. The purpose of this study was to clarify the commonalities and differences in environmental attitudes between residents of the two countries at specific research sites. We then discuss potential causes for these commonalities and differences through comparing data from both countries.

## Method

### *Research sites and respondents*

For a cross regional and cultural investigation between the two countries, we chose Moscow State University (in European Russia), Irkutsk University (in central Russia), and Kamchatka University (in eastern Russia) as the Russian research sites; we chose Hokkaido University (in northern Japan), Chiba University (in central east Japan), Kyoto Prefectural University (in central west Japan), and Minami-Kyushu University (in southern Japan) as the Japanese research sites. Members of the author group and the staff at each university conducted these experiments at each site.

### *Questionnaires*

We prepared three questionnaires: 1) New Environmental Paradigm (NEP) (Dunlap, R.E. et al., 1978), 2) Thompson and Barton Scale Test (TBS) (Thompson, S.C.G. et al., 1994), and 3) Attribute questionnaire. NEP consists of 12 questions (based on a seven-point Likert scale) intended to measure an "ecocentric system of beliefs" as opposed to an anthropocentric system of beliefs, and is the most widely used measure of investigating environmental issues. TBS consists of 25 questions (also based on a seven-point Likert scale) intended to explore environmental attitude from two possible directions – principles (ecocentrism and anthropocentrism) and concern (environmental apathy). "Ecocentrism" refers to the degree to which one tends to regard the ecosystem and natural environment, while "anthropocentrism" refers to the degree to which one tends to think about human life. These two indicators are not mutually exclusive, but coexist. And to determine the degree of interest, "environmental apathy" was used as an indicator of indifference to the natural environment. We asked all respondents to answer the attribute questionnaire first (table 1), and then complete the other two questionnaires.

## Results

### *Comparison between the two countries*

Table 1 lists the results from the data analysis (except those obtained by ANOVA and multiple comparisons), and key findings are summarized below.

NEP: No significant difference was found between the two countries through an analysis of variance (ANOVA). Respondents in both countries apparently have similar ecocentric systems of beliefs (as measured by NEP).

TBS: Ecocentric values were reasonably high in both countries. A statistical comparison (ANOVA) showed that Russia had significantly ($p<0.01$) higher ecocentrism than Japan. As for anthropocentrism, Japan had anthropocentric values that approached the level of "indifference," while Russia had much lower anthropocentric values. A statistical test conducted as part of ANOVA showed that Russia had significantly lower anthropocentrism than Japan ($p<0.01$). In terms of environmental apathy, the results showed that environmental apathy was absolutely lower than the level of "indifference" in both countries (meaning that the respondents in both countries had a strong interest in the environment). ANOVA also revealed that Russia had significantly lower ($p<0.01$) environmental apathy than Japan.

### *Comparison between each research site*

NEP: No significant difference could be found among the seven sites. TBS: We compared each research site in terms of ecocentric values obtained by ANOVA and multiple comparisons (Tukey-Kramer), and found the following significant differences: Moscow–Chiba ($p<0.05$) and Minami-Kyushu ($p<0.05$); Irkutsk–Kamchatka ($p<0.05$) and all Japanese sites except Kyoto ($p<0.01$ to $p<0.05$). As for anthropocentric values, we found the following significant differences: Moscow–Chiba and Kyoto, Minami-Kyushu ($p<0.01$ to $p<0.05$); Chiba–Irkutsk ($p<0.05$) and Kamchatka ($p<0.05$). In terms of environmental apathy, the following differences were significant: Moscow–Chiba ($p<0.01$) and Minami-Kyushu ($p<0.05$); Irkutsk–Chiba ($p<0.01$) and Minami-Kyushu ($p<0.05$). We also confirmed that there were significant differences between both countries in terms of ecocentrism, anthropocentrism, and environmental apathy, and that the sites in Russia tended to be higher in ecocentrism but lower in anthropocentrism and environmental apathy than at the sites in Japan. revealing

the same results as in the comparison between both countries.

### *Factors making a difference between the two countries*

In considering the factors that could influence the four indexes (i.e. ecocentric system of beliefs, ecocentrism, anthropocentrism, environmental apathy), we conducted multiple regression analysis (using a step-wise method where we selected attribute data as independent variables and the four indexes as dependent variables). As a result, the ecocentric system of beliefs in Russia was influenced by sex; ecocentrism was influenced by age and sex; anthropocentrism was influenced by the number of overseas travels, and environmental apathy was significantly influenced by sex ($p<0.01$ to $p<0.05$). In Japan, the ecocentric system of beliefs was influenced by the level of urbanization of a respondents' current residence along with the type of landscape at previous and current residences; anthropocentrism was influenced by the level of urbanization in previous residences; environmental apathy was influenced by the type of landscape at current residences along with the experienced type and number of overseas travels ($p<0.01$ to $p<0.05$).

Table 1. Responents' attributes and the results of analysis

## Discussion

These findings suggest the following: 1) Russian respondents were more ecocentric than Japanese respondents, 2) Russian respondents were less anthropocentric than Japanese respondents, 3) Russian respondents had lower levels of environmental apathy than Japanese respondents, and 4) different factors influence the four indexes in each country. These results suggest that Russian respondents (especially women and the elderly) are highly interested in the natural environment and attempt to adjust their own lives to the natural environment more than Japanese respondents. Thus, Russian respondents were more highly orientated toward human and environmental symbiosis than Japanese respondents. It was also interesting that there was no statistically significant difference in any indicator of environmental attitude in the domestic comparison, such as Moscow – Irkutsk and Hokkaido – Chiba. In others words, these study findings suggest that there may be specific cultural factors that are stronger between respondents from different nationalities compared to the strength of such factors among respondents from the same nationality.

Dunlap,R.E.,Van Liere,K.D. (1978).The New Environmental Paradigm, Journal of Environmental Education, 9(4):10–19

Thompson,S.C.G.,Barton.M.A. (1994). Ecocentric and anthropocentric attitudes toward the environment, Journal of Environmental Psychology, 14: 149–157