



# ADVENTURE ACTIVITIES IN NATURE AND DEVELOPMENT OF PRO-ENVIRONMENTAL **BEHAVIOR: COMPARATIVE ANALYSIS BETWEEN ELDERLY PRACTITIONERS AND THEIR** CONDUCTORS

ATIVIDADES DE AVENTURA NA NATUREZA E DESENVOLVIMENTO DO COMPORTAMENTO PRÓ-AMBIENTAL: ANÁLISE COMPARATIVA ENTRE IDOSOS E **CONDUTORES** 

ACTIVIDADES DE AVENTURA EN LA NATURALEZA Y DESARROLLO COMPORTAMIENTO PROAMBIENTAL: ANÁLISIS COMPARATIVO ENTRE PERSONAS MAYORES Y CONDUCTORES

Cheng Hsin Nery Chao\*, Juliana de Paula Figueiredo\*\*, Viviane Kawano Dias\*\*\*, Cinthia Beatriz da Fonseca\*, Ivan Igor de Oliveira Sobrinho\*, Giselle Helena Tavares\*\*, Gisele Maria Schwartz\*\*\*

#### Palavras-chave

Natureza. Idoso. Educação Ambiental.

Abstract: This qualitative study aimed at comparing results regarding pro-environmental behavior of elderly practitioners and conductors of adventure activities. The Ecocentrism and Anthropocentrism Scale (THOMPSON; BARTON, 1994) was applied to intentional samples of elderly practitioners and young adult conductors of adventure activities in nature. Data were descriptively analyzed by content analysis and indicate that elderly and younger adults are included in the ecocentric dimension. However, the former are more anthropocentric and environmentally apathetic. New studies are suggested to subsidize new action strategies in the Human Motricity field, to stimulate the development of pro-environmental behavior.

### Palabras clave

Naturaleza. Personas mayores. Educación ambiental.

Resumo: Este estudo qualitativo objetivou comparar os resultados referentes ao comportamento pró-ambiental obtidos com idosos praticantes de atividades de aventura com os dos condutores desta vivência. A Escala de Ecocentrismo e Antropocentrismo (THOMPSON; BARTON, 1994) foi aplicada a amostras intencionais de idosos praticantes e de adultos jovens condutores de atividades de aventura na natureza. Os dados analisados descritivamente por Análise de Conteúdo indicam que idosos e adultos jovens classificam-se na dimensão ecocêntrica, porém, idosos são mais antropocêntricos e apáticos ambientais. Sugerem-se novos estudos para subsidiar novas estratégias de ação no campo da Motricidade Humana, para estimular o desenvolvimento do comportamento pró-ambiental.

#### Keywords

Nature. Elderly. Environmental Education.

Resumen: Este estudio cualitativo tuvo como objetivo comparar los resultados referentes al comportamiento proambiental obtenido con personas mayores practicantes de actividades de aventura y con los conductores de dichas actividades. La Escala de Ecocenrismo y Antropocentrismo (THOMPSON; BARTON, 1994) se aplicó a muestras intencionales de mayores y adultos jóvenes conductores de actividades de aventura en la naturaleza. Los datos, analizados descriptivamente por Análisis de Contenido, indican que personas mayores y adultos jóvenes son clasificados en la dimensión ecocéntrica, sin embargo, los mayores son más antropocéntricos y apáticos con el ambiente. Se proponen nuevos estudios para apoyar nuevas estrategias de actuación en el campo de la Motricidad Humana, para estimular el desarrollo del comportamiento proambiental.

Receive on: April 16, 2014 Approved on: January 21, 2015





<sup>\*</sup> Federal University of Rio Grande do Norte, Natal, RN, Brazil. E-mail: nerychao@gmail.com

<sup>\*\*</sup> State University of Santa Catarina (UDESC). Florianópolis, SC, Brazil. E-mail: julianapfig@hotmail.com

<sup>\*\*\*</sup> São Paulo State University (UNESP). Rio Claro, SP, Brazil. E-mail: vivikdias@yahoo.com.br

#### 1. INTRODUCTION

The environmental issue has been discussed at the international level since environmental disasters began to threaten the very survival of humanity. A hostile and polluted environment contributes to more diseases and reflects in public health, increasing public spending and reducing life expectancy (BROOK et al., 2010).

Based on this perspective, the Environmental Education movement became necessary. Much progress has been made since it emerged in Brazil, but actions are still needed to effectively trigger pro-environmental behavior in all age groups, since what has been done so far still seems to be of limited effectiveness.

Environmental Education became mandatory in Brazil after the enactment of the 1988 Federal Constitution and under Law No. 9795/99 (BRASIL, 1999), when the National Environmental Education Policy was created. However, implementation of strategies to raise people's awareness and promote the development of pro-environmental behavior requires new alternatives. Rosa and Carvalhinho (2012) warn that the mere transmission of knowledge and theoretical competences to achieve pro-environmental behavior has been challenged.

In order to change that scenario, an urgent commitment is needed from various fields of study, including Human Kinetics. Practices in the culture of body movement experienced as leisure that may make an important contribution to achieving those perspectives include adventure activities in nature. Some studies (BRUHNS, 2003; SCHWARTZ; CAMPAGNA; TAVA-RES) confirmed that the characteristics of these activities reiterate the sense of adventure, the prospect of controlled risk and experience of significant emotions, and may encourage internal discoveries and reflect on one's existential style, causing changes in habits in different stages of human development, including old age, and ascribing conservation meanings to several actions, particularly by focusing on the prospects of action of professionals involved in those activities.

Therefore, thinking about the inclusion of elders in those practices is quite interesting if today's elders are perceived as the environmental activist from the 1960s and 1970s, when the environmental issue definitely entered the agenda of discussions of international policies or as persons who see the world through different eyes and can effectively contribute to current environmental issues. However, there are few proposals in literature on Environmental Education that are appropriate to the universe of elders. Furthermore, dealing with them in adventure practices in nature is a challenge since those activities imply overcoming limits and pursuing pleasure, which are still poorly explored when the focus is on elders, so that they point out a new field of study that goes beyond "[...] personal, professional and social satisfaction" (DIAS, 2006, p. 57).

When proposing the inclusion of elders in adventure activities in nature, we should take age-related limitations into account. Elders' systematic approximation to adventure activities in nature can help them break free from the four-wall cloister, offering them new possibilities for understanding themselves and the environment around them, and it may even contribute to develop pro-environmental behavior – an aspect to be further studied.

Similarly, focusing on professionals involved in this context of adventure may represent new and more efficient strategies to develop environmentally friendly behavior. That motivated this article, which aims to compare the results of pro-environmental behavior obtained with elders who sporadically practiced adventure activities and conductors of that experience.

Two aspects of this study are innovative: age gap and difference of interest in adventure activities, since elders practice those activities in the context of leisure while conductors see them a professional activity. Therefore, it is exciting to see how these two populations engage in pro-environmental values.

The comparison between the results obtained favors an analysis that can present new interfaces with environmental theory and history and some psychosocial aspects related to age gap, body adventure practices in nature, and the leisure field.

## 2 METHOD

This qualitative and quantitative study was divided into two parts, one concerning a literature review regarding the proposed topics and the other on the exploratory research developed, including two intentional samples relating to elders and professionals. According to Le Boterf (2003), the qualitative-quantitative method mobilizes and combines personal resources (qualitative dimension) and instrumental resources (quantitative dimension) in order to solve a specific research situation, allowing a connection between problems involving actors and their context and specific data.

The first sample included 24 elderly sporadic practitioners of adventure activities (trekking, canoeing), 12 female and 12 male, mean age  $63 \pm 3$  years and  $67 \pm 7$  years, respectively, residents of Natal, Rio Grande do Norte, Brazil. Exclusion criteria were motor disabilities, lack of physical fitness and intellectual impairment. All elderly participants presented ergometric test and a medical report showing they are ready for physical activity.

The second sample referred to conductors of adventure activities. The comparative study was conducted with results obtained by Figueiredo (2012), which used an intentional sample of 24 conductors, 21 of whom were male and three were female, with mean age of 30.37 ± 7.37 and mean time working with adventure activities of 9.25 ± 5.02 years. These conductors worked in the following activities: mountaineering (including land, ice and snow), rafting (water sports) and paragliding (representing air activities), in cities where those sports are practiced. Criteria for inclusion in the study included adults of both sexes with at least one-year experience working with adventure activities. The study conducted by Figueiredo (2012) was used because it was one of the only sources of data focused on conductors of adventure activities, confirming the author as an important reference for this study.

Elders and conductors who participated in the study signed an Informed Consent and Informed (IC) form, followed by ethical procedures in accordance with Resolution 196/96 of the National Health Council. The study was approved by the Ethics Committee for Research with Human Beings of UNESP Biosciences Institute – Rio Claro Campus – 1905/2011 protocol (for conductors) and 1857/2013 (for elders).

The Ecocentrism and Anthropocentrism Scale designed by Thompson and Barton (1994) was used to conduct the research and translated into Portuguese by Pinheiro et al. (2005).1 This is a validated instrument, related to environmental attitudes and behaviors, and

<sup>1</sup> PINHEIRO, J. Q. et al. A escala de ecocentrismo e antropocentrismo como base de indicadores do vínculo pró-ambiental de estudantes universitários. Natal: Grupo de Estudos Interações Pessoa-Ambiente. Universidade Federal do Rio Grande do Norte, 2005.

it corresponds to a five-point Likert scale: Strongly disagree (SD); Disagree (D); Indifferent (I); Agree (A); Strongly agree (SA). Subjects shall indicate their agreement or disagreement with the statements. Its purpose was to analyze the ecocentric, anthropocentric and environmental apathy dimensions regarding pro-environmental attitudes and behaviors of elders based on their experiences of adventure activities and compare these results with those obtained with conductors of adventure activities.

The statements related to the three dimensions are mixed on the scale. They include 12 statements on the ecocentric dimension, 12 statements on the anthropocentric dimension, and nine statements on environmental apathy. When tabulating the data, the number corresponding to the order of statements was included in the scale for better viewing of its distribution. Differences were seen in the sum of agree (agree and strongly agree), indifferent and disagree (disagree and strongly disagree) factors in the categories of ecocentrism, anthropocentrism and environmental apathy.

Comparative data between the two samples were descriptively analyzed through Content Analysis (BARDIN, 2010). The results were illustrated numerically as percentage for easy viewing.

#### 3. RESULTS AND DISCUSSION

Several aspects related to lived history, intellectual maturity, and historical context that pervade environmental issues were highlighted in the results and point out new horizons for research. The tables below present results obtained in the study with elders, and the comparison with the data found in the study with conductors of adventure activities.

Table 1 – Ecocentrism and Anthropocentrism Scale (T & B Scale) – Category Ecocentrism

Statements	SD (%)	D(%)	l(%)	A(%)	SA(%)
1-One of the worst things in overpopulation is that many natural areas are being destroyed by development.	4,20	8,30	0	37,50	50,00
2-I like to spend time in natural environments just to be in touch with nature.	0	0	0	54,20	45,80
5-It is saddening to see the forests being destroyed to be used by agriculture and livestock.	0	12,50	4,20	37,50	45,80
7- I prefer nature reserves over zoos.	0	4,20	8,30	45,80	41,70
12- I need to spend some time in nature to be happy.	0	16,70	16,70	37,50	29,20
16. When I feel sad I find comfort in nature.	8,30	20,80	0	41,70	29,20
21- I am sad to see the natural environment destroyed.	0	0	0	41,70	58,30
26- Nature is valuable, regardless of anything.	0	4,20	0	29,20	66,70
28- Being in nature is a great stress reducer for me.	0	12,50	8,30	25,00	54,20
30- One of the most important reasons to conserve the environment is to preserve wild areas.	0	12,50	8,30	45,80	33,30
32- Sometimes animals seem almost human to me.	0	12,50	4,20	50,00	33,30
33- Humans are part of the ecosystem, as well as other animals.	0	0	0	62,50	37,50

SD – Strongly disagrees with statement; D - Disagrees with statement; I - Indifferent, i. e. neither agrees nor disagrees with statement A - Agree with statement; SA - Strongly agrees with statement Source: Authors (2014)

Table 1 shows the Ecocentrism dimension, which values nature in itself and for its intrinsic value through the association between positive affections and personal well-being while in contact with nature. In general, elders who practice adventure activities clearly have an ecocentric inclination, as well as adventure activity conductors (AACs),<sup>2</sup> with small nuances.

The first item related to the Ecocentrism Category, statement 1, shows a possibility of elders' higher concern with environmental devastation than AACs, since there was no indifference by elders to the statement that relates population growth to destruction of natural areas for development, unlike conductors, and more elders agree. This might confirm what was pointed out by Duarte (2003): that it was from the second half of the 20th century on that men in all nations, ethnic groups or faiths were affected by gradual environmental changes. Most conductors analyzed had not yet matured or been born at that time, while elders were already in their adult age. It is a historical issue that is just part of the experiential construct of a generation.

This factor becomes more evident in statement 5. "Indifferent" includes three times more conductors than senior individuals. The number of "disagrees" is also higher in conductors when stated that it is saddening to see the forests being destroyed to be used for agriculture and livestock. Again, a historical question emerges: in the second half of the 20th century, Brazil saw the effervescence of the environmental movement and conservation of natural environments (FERREIRA, 2001).

However, statement 16 can be seen from different angles since 33.3% of Conductors are indifferent, 12.5% disagree, and 4.17% strongly disagree with finding comfort in nature when they feel sad, while no elder was indifferent, 20.80% of them disagree and 8.30% strongly disagree with that statement. The possible indifference might be caused by the fact that nature is Conductors' workplace, and that creates a routine that can desensitize them. However, this aspect is a challenge to be further studied, given the subjectivity involving relations between emotions and contact with nature.

In Statement 21 - "I am sad to see the natural environment destroyed" - again Conductors showed indifference, while elders did not. Since Conductors depend on nature for their profession, that answer is strange. One possibility is that the very alternative creates a doubtful reaction toward the emotional state. Another point is that elders have had more contact with the natural environment since their childhoods in the 1950s, when the city of Natal had only 15 neighborhoods and a population of 103,215 (QUEIROZ, 2010); currently, there are 35 neighborhoods and 803,739 inhabitants (IBGE, 2014). Conductors may not have had such contact nature with due to the growth of cities, which is directly linked to structural development and urbanization, whose premises often include reduction in natural areas.

In Statement 30, indicating preservation of wilderness areas as one of the most important reasons to conserve the environment, the ecocentric trend was exacerbated in Conductors, differently from previous statements. There were more disagreeing elders, which can indicate two possibilities. First: Conductors depend on nature for their profession, and this would influence the answer. Another possibility is to consider the conservation trend that began in the nineteenth century, according to which there might be interaction between human beings and nature with correct and efficient use of natural resources. However, this aspect may have other biases, since, in the context of marketing activities, nature can be seen as and turned into only

Tables related to Adventure Activity Condutors, see Figueiredo (2012).

merchandise (DIEGUES, 2004).

There is a trend towards a larger ecocentric dimension among elders, possibly for the historical reasons listed above, related to environmental issues. Another justification is that it can also be related to maturity and life experience.

Table 2 - ecocentrism and Anthropocentrism Scale (T & B Scale) - Category Anthropocentrism

Statements	SD (%)	D(%)	I(%)	A(%)	SA(%)
4- The worst thing about the loss of tropical forests is that development of new medicines will suffer.	0	12,50	4,20	54,20	29,20
8- The best of camping is that it is an inexpensive way to spend holidays.	8,30	8,30	12,50	58,30	12,50
11- It worries me that human beings are left without their oil reserves.	0	29,20	4,20	50,00	16,70
13- Science and technology will solve our problems of pollution, overpopulation and increasingly limited natural resources.	4,20	16,70	20,80	50,00	8,30
14 - What worries me most about deforestation is that there will be no (native) wood for future generations.	0	25,00	4,20	37,50	33,30
19 - One of the most important reasons for keeping lakes and rivers clean is for people to have a place to have fun in the water.	0	41,70	12,50	33,30	12,50
22 - The most important reason for environmental conservation is human survival.	0	8,30	8,30	62,50	20,80
23 - One of the best things about recycling is that it saves money.	0	25,00	8,30	41,70	25,00
24- Nature is important because it can contribute to human pleasure and wellbeing.	0	8,30	0	45,80	45,80
27- We need to preserve resources to maintain a high quality of life.	0	0	0	41,70	58,30
29- One of the most important reasons to save the environment is to ensure a good and continuous standard of living.	0	8,30	4,20	54,20	33,30
31- Continued use of agricultural land is a good idea as long as it does not interfere with quality of life.	0	8,30	0	41,70	50,00

SD - Strongly disagrees with statement; D - Disagrees with statement; I - Indifferent, i. e. neither agrees nor disagrees with statement A - Agree with statement; SA - Strongly agrees with statement Source: Authors (2014)

Table 2 corresponds to the Anthropocentrism dimension in which human benefit is the aim of maintaining natural resources. According to the creators of the scale - Thompson and Barton (1994) - people can have ecocentric and anthropocentric attitudes at the same time, but they will be more selfish regarding pro-environmental behavior. That is seen in the results obtained with elders, since the anthropocentric trend is present in 11 out of 12 statements.

In Figueiredo's (2012) study, the anthropocentric trend also appeared, but only in four out of 12 statements, i. e. there is a difference in attitude between elders and younger adults aged between 22 and 35, which is part of the age range of study participants. Thompson and Barton (1994) argue that the more anthropocentric people are, the less likely they are to present conservation behaviors. Thus, even if the elders present a greater tendency to ecocentrism, in everyday life, Conductors' contribution to conservation of nature is possibly much higher because elders also present a much higher tendency to anthropocentrism than conductors.

Figueiredo (2012) cites Festinger's (1957) Theory of Cognitive Dissonance, in which attitudes do not always define the behavior. In the environmental issue, that translates, for example, as people who believe in recycling to prevent pollution caused by waste but do not separate organic from recyclable waste in their daily lives.

An important differences between elders and Conductors in this table is: in statement 4 – "The worst thing about the loss of tropical forests is that the development of new medicines will suffer" - 54.20% of elders agreed and 29.20% strongly agreed with it, while only 37.50% of Conductors agreed and 8.33% strongly agreed. One of the possibilities to justify those answers is the very age-related psychophysiological condition. Elders need to and worry more about caring for their health than young adults. In this case, the survival instinct prevails over preservation of nature.

Statement 8 proposes that "the best of camping is that it is an inexpensive way to spend holidays". That statement is quite interesting because 58.30% of elders agree and 12.50% strongly agree, compared to only 20.83% and 8.33% of Conductors, respectively. Different possibilities can explain this result: first, for Conductors, conducting groups in adventure activities is an income source, of which camping is part, so that few consider it an inexpensive activity or vacation. Another explanation is that the sample considers that the best of camping is being in nature, regardless of the financial value assigned to it. Another possibility goes back to the reality of the last century, when there were more free-access natural areas. Authors like Requião (1991) encouraged hiking and contact with nature to understand it and respect it on their own terms, and that possibly remained in the subconscious of the elders who agreed with the statement.

In statement 11, anthropocentrism is high in elders when it comes to human beings' concern about running out of oil reserves: 50% of elders agreed and 16.70% strongly agreed it, compared to only 25% of AACs. This can also be related to memories from mid-twentieth century, when the oil crisis shook the Western world, since it used to be and remains the planet's main source of energy (MURPHY; HALL, 2011).

In statement 13, "Science and technology will solve our pollution problems, overpopulation and increasingly limited natural resources", elders are also more anthropocentric. This goes back to conservationism, which advocated that "[...] nature is often slow, and management processes can make it efficient" (DIEGUES, 2004, p. 29).

Elders' exacerbated anthropocentrism is repeated in statement 14, on the concern that there will be no native wood left for future generations due to deforestation: 37.50% of elders agree and 33.30% strongly agree while 20.83% of Conductors agree and 12.50% strongly agree with it. Here, concern for future generations may be related to the concept of sustainability, widespread in the second half of the twentieth century, especially since the Brundtland Report (COMISSAO MUNDIAL DE MEIO AMBIENTE E DESENVOLVIMENTO DAS NAÇOES UNIDAS, 1988).

In statement 22, according to which the most important reason for environmental conservation is human survival, there was no difference between elders' and conductors answers: over 54% in each group agree and 20% strongly agree with the statement. However, emphasis is placed here since it is the statement most related to the anthropocentric dimension and, in this case, both groups showed that strong trend. When thinking about the strategies that humans developed over the centuries to explain the world (myth, religion, philosophy, art and science) (SEVERINO, 1994), the anthropocentric tendency has been present since the beginning, since

human beings are distinguished by their ability to reason, to transform elements of nature, and to dominate other beings (CHAO, 2005).

Statement 23 says that saving money is one of the best things about recycling: 41.70% of elders agreed and 25% strongly agreed, while 16.67% of Conductors agreed and 4.17% strongly agreed with it. Again, elders proved to be much more anthropocentric. In this case, the historical issue may also exert influence, since, in Brazil, recycling began in 1896, with the first garbage collectors sending bottles, iron and other materials to local factories to be reused. As early as 1920, with the international debate on waste recycling and possibilities for economic profit resulting from it, the issue gained momentum in Brazil. In 1970, new tools and products were created that facilitated the recycling process, and several projects and programs emerged to encourage waste recycling (HISTÓRIA..., 2014).

In statement 31, about the continuous use of land for agriculture being a good idea as long as it does not interfere with quality of life, elders were again more anthropocentric, with 41.70% agreeing and 50.00% strongly agreeing with it. Among Conductors, 37.50% agreed and 8.33% strongly agreed. That is possibly due to Conductors' need for native and not degraded areas to develop their activities, and they are aware that much of the devastation of natural areas was due to the need for areas for agriculture and livestock. Veiga (2003) mentions other problems resulting from devastation of forests and improper land management, such as erosion, need to use more fertilizers, insect proliferation, mites, fungi and bacteria, and also water pollution.

Table 3 – Ecocentrism and Anthropocentrism Scale (Scale T & B) – Environmental Apathy Category

Statements	SD (%)	D(%)	I(%)	A(%)	SA(%)
3- Environmental threats such as deforestation and depletion of the ozone layer have been overly publicized.	0	33,30	8,30	41,70	16,70
6- Most environmentalists are pessimistic and somewhat paranoid.	4,20	45,80	12,50	29,20	8,30
9- I think the problem of depletion of natural resources is not as bad as they say.	12,50	33,30	8,30	33,30	12,50
10- For me it is difficult to be very concerned about environmental issues.	4,20	33,30	20,80	25,00	16,70
15- I think humans do not depend on nature to survive.	45,80	45,80	4,20	0	4,20
17- Most environmental problems will be solved on their own if given enough time.	16,70	25,00	4,20	37,50	16,70
18- Environmental problems do not matter to me.	41,70	54,20	0	0	4,20
20- I am against programs to preserve wild places, to reduce pollution and conserve resources.	25,00	37,50	0	20,80	16,70
25- There is too much emphasis given to conservation.	20,80	25,00	8,30	25,00	20,80

SD – Strongly disagrees with statement; D - Disagrees with statement; I - Indifferent, i. e. neither agrees nor disagrees with statement A - Agree with statement; SA - Strongly agrees with statement Source: Authors (2014)

Table 3, regarding Environmental Apathy, stresses indifference and emphasizes non-involvement with environmental issues. The results demonstrate that elders are more prone to environmental apathy when compared with Conductors. Accordingly, it is important to analyze items where this category was more frequent.

Statement 3 says that "environmental threats such as deforestation and depletion of the ozone layer have been overly publicized." While no Conductor agreed and 12.5% strongly agreed, 41.70% of elders agreed and 16.70% strongly agreed, showing a higher degree of environmental apathy in the latter. In this case, since younger adults are Adventure Activity Conductors, one possible explanation is that most are already feeling the problem of deforestation, even because they need natural areas to work.

Statement 6 shows a similar situation to statement 3, when it points out that "most environmentalists are pessimistic and somewhat paranoid". Only 4.17% of Conductors agree and none of them strongly agree, while 29.20% of elders agree and 8.30% strongly agree.

In statement 9, when it is said that the problem of depletion of natural resources is not as bad as they say, 8.33% of Conductors agreed and 8.33% strongly agreed, while 33.30% of elders agreed and 12.50 % strongly agreed. In this case, an analogy can be drawn to the Brundtland Report (COMISSÃO MUNDIAL DE MEIO AMBIENTE E DESENVOLVIMENTO DAS NAÇÕES UNIDAS, 1988), in which one of the points that caused great controversy was depletion of natural resources. According to those estimates, several resources would already be scarce. However, this did not happen due to actions taken and also because of new ways of using and creating new technologies for reuse of several materials.

Statement 10 says that it is difficult to be very concerned with environmental issues: 16.67% of Conductors agreed and 4.17% strongly agreed while 25.00% of elders agreed and 16.70% strongly agreed with it. There is a clear trend towards environmental apathy in elders, but we must remember that they are practitioners of adventure activities in protected areas while Conductors sometimes use several unprotected areas only preserved by their owners' private effort.

There is an inversion when comparing the results for statement 15, which says that human beings do not depend on nature to survive. In this case, Conductors were more environmentally apathetic, since 16.67% strongly agreed, compared to only 4.20% of elders. This difference might be related to what was previously mentioned in the analysis of Table 2: elders had more contact with environmental problems in an effervescent moment of environmentalism, being more mature in terms of human dependence on nature (PAEHLKE, 1989).

In statement 17, "[...] most environmental problems will be solved on their own if given enough time", 37.50% of elders agree and 16.70% strongly agree with it, compared to 25.00% and 4.17% of Conductors. Again, we can see higher environmental apathy on elders, possibly influenced by the same reasons reported in statement 9, according to which many of the predictions about environmental problems were not felt more effectively due to new policies and environmental rules and were not well explained to the general public.

It is assumed that statement 20 - "I am against programs to preserve wild places, to reduce pollution and save resources" - was misinterpreted by elders, since 20.80% agreed and 16.70% strongly agreed with the statement, compared to 8.33% and 4.17% of Conductors respectively. Thus, these answers seem contradictory when compared with Table 1. A possible explanation may be based on Festinger's (1957) Theory of Cognitive Dissonance.

In statement 25 – "There is too much emphasis given to conservation" – 25% of elders agree and 20.80% strongly agree, compared to 25% and none of Conductors respectively. Environmental apathy, again, is higher in elders than in Conductors. One possible explanation is that the latter have a higher perception about the problem of environmental devastation because they work directly in nature. Another possibility of analysis would be more focused on history, given that, at the height of the environmental movement there were two streams: the conservationist, typically anthropocentric one, and the preservationist, typically ecocentric one (PAEHLKE, 1989).

## 4 CONCLUSIONS

Comparing results obtained in the Ecocentrism and Anthropocentrism Scale (T & B), it is clear that both elderly practitioners of adventure activities and their young adult conductors are classified in the ecocentric dimension. This confirms the theory that contact with nature seems to be paramount in ecological awareness raising.

However, elders are more anthropocentric and their feature oriented to environmental apathy was stronger than that of conductors of adventure activities. This agrees with what Thompson and Barton (1994) argue, that people can be ecocentric and anthropocentric at the same time. Therefore, the more anthropocentric they are, the less likely they are to present conservation behaviors.

In the analyses carried out, it can be concluded that adventure activity conductors possibly contribute more to the development of pro-environmental behavior. This is shown both by their negligible anthropocentric trends and environmental apathy, when related to the ecocentric dimension, and by the fact that their profession allows this educational character.

Finally, further studies are needed to enrich the discussion about elders, the relationship between generations, adventure activities in nature, environmental education, and pro-environmental behavior in order to increase knowledge in the field of study Human Kinetics.

## **REFERENCES**

BARDIN, Laurence. Análise de Conteúdo. 2. ed. rev. e atual. Lisboa: Edições70, 2010.

BRASIL. Presidência da República. Casa Civil. Subchefia para assuntos jurídicos. Lei nº 9.795, de 27 de abril de 1999. Dispõe sobre a Educação Ambiental, institui a Política Nacional de Educação Ambiental e dá outras providências. Brasília, 27 abr. 1999. Disponível em: < http://www.planalto.gov.br/ ccivil 03/Leis/L9795.htm >. Acesso em: 5 abr. 2012.

BROOK, Robert D. et al. Particulate matter air pollution and cardiovascular disease: an update to the scientific statement from the American Heart Association. Circulation, Baltimore, v. 121, n. 2010, p. 2331-2378, may 2010.

BRUHNS, Heloisa Turini. No ritmo da aventura: explorando sensações e emoções. *In:* MARINHO, Alciany; BRUHNS, Heloisa Turini. (Org.). Turismo, lazer e natureza. São Paulo: Manole, 2003. p. 29-52.

CHAO, Cheng Hsin Nery. Universidade e Educação Ambiental. 2005. 230 f. Tese (Doutorado em Educação) - Faculdade de Educação, Universidade do Rio Grande do Norte, Natal, 2005.

COMISSÃO MUNDIAL DE MEIO AMBIENTE E DESENVOLVIMENTO DAS NAÇÕES UNIDAS. Nosso futuro comum: o relatório Brundtland. Rio de Janeiro: Fundação Getúlio Vargas, 1988.

DIAS, Viviane Kawano. A participação de idosos em atividades de aventura na natureza no âmbito do lazer: valores e significados. 2006. 119 f. Dissertação (Mestrado em Ciências da Motricidade) - Instituto de Biociências, Universidade Estadual Paulista, Rio Claro, 2006.

DIEGUES, Antonio Carlos S. O mito moderno da natureza intocada. 3. ed. São Paulo: Hucitec, 2004.

DUARTE, Moacyr. O problema do risco tecnológico ambiental. *In:* TRIGUEIRO, André. (Coord). Meio ambiente no século 21: 21 especialistas falam da questão ambiental nas suas áreas de conhecimento. Rio de Janeiro: Sextante, 2003. p. 245-257.

FERREIRA, Lúcia C. Ambientalismo brasileiro nos anos de 1990: crise e oportunidade de mudança social. In: SORRENTINO, Marcos. (Org.). Ambientalismo e participação na contemporaneidade. São Paulo: Editora da PUCSP, 2001. p. 57-84.

FESTINGER, Leon. A Theory of Cognitive Dissonance. Stanford: Stanford University, 1957.

FIGUEIREDO, Juliana de Paula. Atitudes de condutores de atividades de aventura e a perspectiva de disseminação da sensibilização ambiental. 2012. 154 f. Dissertação (Mestrado em Ciências da Motricidade) - Instituto de Biociências, Universidade Estadual Paulista, Rio Claro, 2012.

HISTÓRIA e evolução da reciclagem de lixo no Brasil. In: Educação www.educacao.cc. Disponível em: <a href="mailto:river-universate-liver-no-brasil/">em: <a href="mailto:river-no-brasil/">em: <a href="mailto:river-universate-liver-no-brasil/">http://www.educacao.cc/ambiental/historia-e-evolucao-da-reciclagem-de-liver-no-brasil/</a>>. Acesso em: 5 abr. 2014.

IBGE. INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. Cidades @, Disponível em: < http://www.cidades.ibge.gov.br/xtras/perfil.php?lang=&codmun=240810&search=llinfogr%E1ficos:informa%E7%F5es-completas >. Acesso em: 21 nov. 2014.

LE BOTERF, Guy. Desenvolvendo a competência dos profissionais. Porto Alegre: Artmed, 2003.

MURPHY, D. J.; HALL, C. A. S. Energy return on investment, peak oil, and the end of economic growth. Annals of the New York Academy of Sciences, New York, v. 1219, n. 2011, p. 52-72, 2011.

PAEHLKE, R. C. Environmentalism and the future of progressive politics. New Haven: Yale University, 1989.

QUEIROZ, Thiago Augusto Nogueira de. A produção do espaço urbano de Natal/RN: algumas considerações sobre as políticas públicas. Observatorium: Revista Eletrônica de Geografia, Uberlândia, v. 2, n. 4, p. 2-16, jul. 2010.

REQUIÃO, Cristiano. Manual do excursionista. São Paulo: Nobel, 1991.

ROSA, Paulo F.; CARVALHINHO, Luís. A. D. A educação ambiental e o desporto na natureza: uma reflexão crítica sobre os novos paradigmas da educação ambiental e o potencial do desporto como metodologia de ensino. Movimento, Porto Alegre, v. 18, n. 3, p. 259-280, jul./set. 2012.

SCHWARTZ, Gisele Maria; CAMPAGNA, Jossett; TAVARES, Giselle Helena. As atividades de aventura e a configuração do estilo pró-ativo no lazer. In: PEREIRA, Dimitri Woo et al. (Org.). Entre o urbano e a natureza: a inclusão na aventura. São Paulo: Lexia, 2011. Cap. 6, p. 75-88.

SEVERINO, Antônio Joaquim. Filosofia. São Paulo: Cortez, 1994.

THOMPSON, Suzanne Gagnon T.; BARTON, Michele A. Ecocentric and anthropocentric attitudes toward the environment. Journal of Environmental Psychology, London, v. 14, n. 2, p. 149-157, jun. 1994.

VEIGA, José Eli da. A agricultura no mundo moderno: diagnóstico e perspectiva. *In:* TRIGUEIRO, André. (Coord). Meio ambiente no século 21: 21 especialistas falam da questão ambiental nas suas áreas de conhecimento. Rio de Janeiro: Sextante, 2003. p. 199-213.