A Preliminary Analysis of Environmental Dilemmas and Environmental Ethical Reasoning Among Hispanic and Non-Hispanic Forest Visitors[1]

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Abstract: In a preliminary investigation of environmental reasoning, Hispanic and Anglo-American visitors were interviewed during the summer of 1991 in two National Forests near Los Angeles. A bilingual research technician approached parties visiting the sample sites and, after a brief introduction, requested that they participate in the study. No more than two persons from each party were interviewed, and a total of 132 interviews were conducted. The data collected during the interviews were evaluated by using theoretical frameworks of environmental ethical reasoning based upon the moral reasoning contributions of psychologists L. Kolhberg and C. Gilligan.

Greater diversity of cultural heritage is a significant demographic trend in the United States and the number of forest visitors of Hispanic ancestry is increasing in many urban proximate areas throughout the country. Resource managers are now faced with the need to effectively communicate to visitors with diverse cultural backgrounds and value systems rules about safety and environmental protection. This creates a need to clarify visitors' values and behavior toward the natural environment as associated with their cultural or ethnic heritage.

An ethical theme of ecological protection is the content of many persuasive interpretive communications to visitors. The success of this communication strategy depends on both the effectiveness of the message in prompting behavior and the ability of the visitor to comprehend the message. It is unclear if ethical messages about the natural environment are likely to have a uniform or common appeal to a culturally diverse visitor population. Such messages may not be appropriate to the reasoning ability (cognitive development) or level of comprehension of a highly varied audience.

Partridge (1982) proposed a theory about ecological morality as a basis to integrate the developmental theory of Kohlberg (1981, 1984) with an environmental ethical context. Subsequently, Christensen and Dustin (1986) suggested that Kohlberg's theory could be used as a guide to design interpretive visitor communications.

Previous research indicated that additional empirical investigations about the development of environmental ethical reasoning would be desirable prior to using Kohlberg's theory in the design of communications about environmental protection (Swearingen 1989).

This paper reports on our study that compared the environmental ethical reasoning of both Anglo-American and Hispanic forest visitors.

Methods

In a preliminary investigation of environmental reasoning, Hispanic and Anglo-American visitors were interviewed during the summer of 1991 in two National Forests near Los Angeles. The sampling procedure consisted of quota sampling at random visitor contact points in dispersed recreation areas of the forests on weekend days during June, July and August 1991. A bilingual research technician approached parties visiting the sample sites, and after a brief introduction, requested participation in the study. No more than two persons from each party were interviewed, and a total of 127 interviews were conducted.

The interview procedure included a one page self-administered form to collect demographic information (age, gender, marital status, years of education, ethnicity, years of residence in the United States) and a taped interview. After completing the questionnaire, the subjects were asked to read and respond to a scenario that posed an ethical dilemma involving conflicting values toward the natural environment. During the preliminary data collection, several dilemmas were used in the study. Two dilemmas were determined most effective in eliciting thoughtful responses, and these two scenarios were then used for the remainder of the data collection. One involved a conflict between species preservation and resource extraction, and the other scenario compared preferences for personal freedom to hike off trail to efforts of the managing public agency to prevent such behavior to protect the park environment. Respondents were asked for their opinion of the appropriate resolution of the dilemma and to explain their rationale for that opinion. After completing this structured component of the interview, respondents were then asked to describe their perception of an ethical conflict involving the natural environment. If the respondents could not readily relate a personal experience, they were asked to offer a more general or even a hypothetical conflict in environmental ethics. The subjects were again asked to explain their opinions concerning these self-generated

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dilemmas and to explain their rationales. A total of 132 valid responses were obtained from structured interviews, and 44 valid responses to self generated dilemmas.

The data collected during the interviews were evaluated using an environmental reasoning framework based upon Kohlberg's theory of development of moral reasoning. Analysis of the data consisted of a two stage content analysis of the visitors' comments categorizing both the normative content of the arguments and the rationales for their normative statements. Each visitors' comments were then further classified according to prototypical stage content of their arguments. This analysis was based on a standard scoring procedure when feasible (Colby and Kohlberg 1987), and an evolving theoretical extension of this scoring procedure used in a hermeneutic process to understand ethical reasoning in an environmental context. Responses were then analyzed by ethnicity and duration of residence in the United States to determine if there were significant differences in normative attitudes or reasoning abilities of ethnic subgroups of the sample.

Results

Demographic Profile

The descriptive data from the self-administered questionnaires were examined to determine if there was any bias in the sampling procedures. Contacts were evenly distributed throughout the sampling period. Male respondents represented 61 percent of all respondents; and the majority of respondents (57 percent) were married, living with partners. The mean age of all respondents was 33; and the average respondent had completed about 10 years of education. Of those responding to the question of ethnic heritage, Anglo-Americans comprised 42 percent and Mexican-Americans comprised 58 percent of the respondents.

Earlier investigations of the forest visitor also reported visitor demographic and cultural characteristics similar to the characteristics of this sample (Carr and Williams 1993; Ewert and Pfister 1990). The bilingual technician used the same dispersed sites from the previous studies in which the comparable data were collected.

The majority (54 percent) of the respondents who completed a questionnaire were born in Mexico (*table 1*). About 40 percent of the respondents were born in the United States.

Of the respondents, 94 percent were born in the United States or Mexico. Because place of birth does indicate the level of cultural influences on cognitive patterns, this group served as a basis for comparison. Duration of residence and nationality (place of birth) were combined as a measure of the degree of acculturation in the United States (*table 2*). Of the respondents completing the questions pertaining to socio-demographic characteristics, 42 percent were from the United States, 23 percent were Mexico-born with less than 10 years of residence in the United States, and 35 percent of the Mexico-born residents had been in the United States more than 10 years.

Structure Dilemmas

Subjects were asked to respond to one or more different structure dilemmas, and we then analyzed the norm and stage of reasoning associated with these responses. The Wilderness Resource dilemma presented a choice between resource exploitation and endangered species preservation. This particular dilemma elicited the most elaborate moral arguments by the respondents. When asked to explain their position, 41 percent invoked a public or private property rights moral norm, 32 percent of the respondents favored an environmental life preservation norm, and 11 percent advanced an argument based on preservation of human quality/quantity of life (*table 3*).

To further explain the rationale for their positions on the Wilderness Resource dilemma, a significant proportion of all respondents (45.2 percent) were concerned about the collective and individual consequences of resource extraction for human society (*table 3*). Only 16 percent of the responses concerned the consequences of resource development on the environment, and 28.7 percent of the arguments were based on abstract moral ideals of duty, rights, and equity or other principled arguments (*table 4*).

Similar patterns of predominantly anthropocentric social concern for environmental problems emerged in responses to other dilemmas. The second structured dilemma, called the "Shortcut" presented a scenario where a visitor is confronted with a choice of hiking on or off an established trail for personal reasons. Respondents invoked either agency authority, or law and punishment as the basis for decisions of 63.4 percent of the cases to this scenario. Significantly, 26.8 percent of the respondents favored an argument for responsibility and care for others in explaining this dilemma (*Table 5a/5b*).

One critic of Kohlberg's approach (Gilligan 1982) has argued that his standard scoring procedure (Colby and others 1983) does not adequately recognize the "care orientation" in moral judgments. Gilligan objected to Kohlberg's use of male subjects in formulating his model, and his emphasis on justice reasoning as the primary basis for moral judgments. The care orientation is considered more characteristic of female moral reasoning. Thus, the standard scoring procedure understates the level of moral reasoning of some females. Most of the responses to this dilemma which favored a care orientation were from females. These qualitative data support the critics of Kohlberg; thus, Gilligan's observations on gender differences in moral reasoning also apply to an environmental context (*table 6*). The use of a care orientation in resolving environmental ethical dilemmas has also been noted in other research.

Although the interviews primarily included brief responses, many of the respondents responses to the Wilderness Resource dilemma (n = 67) were sufficiently developed to tentatively offer a characterization of their stages of moral reasoning in an environmental context (*table 7*). As expected, few respondents (4.5 percent) advanced preconventional stage 2 arguments. The majority (76.1 percent) of all respondents' reasoning could be considered

Table 1—*Respondents' place of birth*[1]

Place of Birth	Frequency	Percent
United States	28	40
Mexico	38	54
Other	4	6
TOTAL	70	100.0

[1]Missing cases: 62

Table 2—*Foreign born and native born*[1]

Place of Birth	Frequency	Percent
United States	28	42.4
Mexico <10 years in USA	15	22.7
Mexico >11 years in USA	23	34.8
TOTAL	66	100.0

[1]Missing cases: 66

Table 3—*Wilderness resource dilemma-norm*[1]

Moral Norm	Frequency	Percent
Property - Public	25	33.3
Property - Private	6	8.0
Life Preservation	24	32.0
Life Quality - Human	5	6.7
Life Quantity-Environmental	3	4.0
Affiliation	3	4.0
Civil Rights	3	4.0
Life Quantity - Human	2	2.7
Rights of Nature	2	2.7
Life Quality-Environmental	1	1.3
Authority	1	1.3
TOTAL	75	100.0

[1]Missing cases: 15

Table 4—*Wilderness resource dilemma-element*[1]

Moral Element	Frequency	Percent
Group Consequences - Human	29	39.7
Group Consequences - Nature	12	16.4
Having A Duty/No Duty	9	12.3
Serving Ideal Social/Env Principle	7	9.6
Reciprocity	5	6.8
Individual Consequences - Human	4	5.5
Intergenerational Equity	3	4.1
Having A Right	2	2.7
Obey/Consent From Authority	1	1.4
Balancing Perspective	1	1.4
TOTAL	73	100.0

[1]Missing cases: 17

Table 5a—*Shortcut dilemma*[1]

Moral Norm	Frequency	Percent
Authority	17	41.5
Care	11	26.8
Punishment	6	14.6
Law	3	7.3
Life Quality - Human	2	4.9
Life Preservation - Human	1	2.4
Affiliation	1	2.4
TOTAL	41	100.0

[1]Missing cases: 5

Table 5b—*Shortcut dilemma*[1]

Moral Element	Frequency	Percent
Obey/Consent from Authority	3	7.5
Having a Duty/No Duty	1	2.5
Reward/Punishment	1	2.5
Individual Consequences	27	67.5
Group Consequences - Human	5	12.5
Group Consequences - Nature	3	7.5
TOTAL	40	100.0

[1]Missing cases: 6

Table 6—Norms used to decide structured dilemmas (general content categories)

Norms	Frequency	Percent
Life Preservation - Environmental	29	22.0
Human Consequences	44	33.3
Law/Authority	41	31.1
Care	12	9.1
Other	6	4.5
TOTAL	132	100.0

Table 7—*Stage content of all structured dilemma responses*[1]

Stages	Frequency	Percent
Stage 2	18	15.4
Stage 2/3-3	39	33.3
Stage 3/4-4	46	39.3
Stage 4/5-5	14	12.0
TOTAL	117	100.0

[1]Missing cases: 45

conventional reasoning, with 29.8 percent using stage 3 reasoning and 46.3 percent using stage 4 reasoning. A small minority (19.4 percent) of respondents used more abstract post conventional reasoning in their arguments.

A comparison of norms by stages is revealing despite the low expected frequencies of too many cells confounding the validity and interpretation of the chi square statistic (*table 8*). These data arefor the structured dilemmas with categories of norms collapsed to facilitate interpretation of the results. In general, ethical considerations for the environment were characteristic of both normative reasoning (stages 3 and 4) and principled reasoning (stage 5). More normative reasoning expressing concern for the human consequences of environmental conflicts is evident at the conventional stages (stage 3 and stage 4). The respondents classified at the low stage 2 or 3 level showed more concern for law and the roles of authority. The care orientation was most evident at stage 4. These results are consistent with theoretical expectations.

Ethnic Differences

Results of these preliminary findings were also examined in the context of the respondents ethnic heritage (*table 9*). The similarities in the ethnic groups' responses

Table 8—*Norms used to decide structured dilemmas by respondents' stage of reasoning*[1]

	Stage of moral reasoning				
NORM	2	2/3-3	3/4-4	4/5-5	Row total
Life Preservation - Environmental					
Count	0	5	10	12	
Exp val	4.2	9.0	10.6	3.2	27
Row pct	0.0	18.5	37.0	44.4	23.1 pct
Col pct	0.0	12.8	21.7	85.7	
Human Consequences					
Count	3	13	22	0	
Exp val	5.8	12.7	14.9	4.5	38
Row pct	7.9	34.2	57.9	0.0	32.5
Col pct	16.7	33.3	47.8	0.0	
Law/Authority					
Count	15	18	5	1	
Exp val	6.0	13.0	15.3	4.7	39
Row pct	38.5	46.2	12.8	2.6	33.3
Col pct	83.3	46.2	10.9	7.1	
Care					
Count	0	1	9	1	
Exp val	1.7	3.7	4.3	1.3	11
Pow pct	0.0	9.1	81.8	9.1	9.4
Col pct	0.0	2.6	19.6	7.1	
Other					
Count	0	0	0	0	
Exp val	4.2	4.2	4.2	4.2	2
Row pct	0.0	0.0	0.0	0.0	1.7
Col pct	0.0	0.0	0.0	0.0	
COLUMN TOTAL					
Exp val	18	39	46	14	117
Row pct	15.4	33.3	39.3	12.0	100.0

[1] Chi-Square 77.07647; D.F. 12; Significance .0000; Cells with E.F. < 5: 12 of 20 (60%)

Eta = .41397 Cramer's V = .46861

[2] Rows of datas (top to bottom)
Count
Experimental Value
Row (percent)
Column (percent)

was very evident. The difference between the Hispanic and Anglo environmental ethical arguments was low. Both ethnic groups primarily favored conventional stages of reasoning and offered anthropocentric norms in stating their position. A measure of acculturation, was examined to explain these results (*tables 9, 10 and 11*). A significant difference was not found between native born respondents, Mexico-born respondents in the United States 10 years or less and Mexico-born respondents in the United States more than 10 years. On the basis of these limited findings, difference in environmental ethical reasoning among the ethnic grouping in this sample is not evident. However, to generalize these findings beyond the sample of forest visitors contacted in this study would require further investigation.

Table 9—*Foreign-born and native-born respondents*[1]

Value Label	Frequency	Percent	Valid percent	Cum. percent
United States	28	21.2	42.4	42.4
Mexico <10 Yrs	15	11.0	22.7	65.2
Mexico >11 Yrs	23	17.4	34.8	100.0
		66.0	50.3	MISSING
TOTAL	66	132.0	100.0	100.0

[1]Valid cases: 66 Missing cases: 66

Table 10— *Stage of reasoning: Self dilemmas by birthplace &length of time in USA*[1]

		Born in Mexico		
Stage	Born in U.S.	In U.S. < 10 years	In U.S. > 11 years	Row total
Stage 2				
Count	1	0	2	
Exp val	1.2	0.9	1.0	3
Row pct	0.0	18.5	37.0	(6.8)
Col pct	0.0	12.8	21.7	
Stage 2/3-3				
Count	4	5	4	
Exp val	5.0	3.8	4.1	13
Row pct	30.8	38.5	0.8	(29.5)
Col pct	23.5	38.5	28.6	
Stage 3/4-4				
Count	11	5	7	23
Exp val	8.9	6.8	7.3	(52.3)
Row pct	47.8	21.7	30.4	
Col pct	64.7	38.5	50.0	
Stage 4/5-5				
Count	1	3	1	5
Exp val	1.9	1.5	1.6	(11.4)
Row pct	20.0	60.0	20.0	
Col pct	5.0	23.1	7.1	
COLUMN TOTAL				
Exp val	17	13	14	44
Row pct	38.6	29.5	31.8	(100.0)

[1›]

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
5.84523	6	.4407	.886	8-12 (66)

Eta = .17957 Cramer's V = .25773 Number of Missing Observations = 118

[2] Rows of datas (top to bottom)
Count
Experimental Value
Row (percent)
Column (percent)

Table 11— *Stage of foreign-born and native-born respondent*[1]

Stage	Born in U.S.	Born in Mexico: In U.S. < 10 years	Born in Mexico: In U.S. > 11 years	Row total
Stage 2				
Count	1	1	0	
Exp val	0.5	0.9	0.6	2
Row pct	50.0	50.0	0.0	8.0
Col pct	16.7	12.8	21.7	
Stage 2/3-3				
Count	1	2	4	
Exp val	1.7	3.1	2.2	7
Row pct	14.3	28.6	57.1	28.0
Col pct	16.7	18.2	50.0	
Stage 3/4-4				
Count	1	6	4	
Exp val	2.6	4.8	3.5	11
Row pct	9.1	54.5	54.5	44.0
Col pct	16.7	54.5	50.0	
Stage 4/5-5				
Count	3	2	0	
Exp val	1.2	2.2	1.6	5
Row pct	60.0	40.0	0.0	20.0
Col pct	50.0	18.2	0.0	
COLUMN TOTAL				
Exp val	6	11	8	25
Row pct	24.0	44.0	32.0	100.0

1› Chi-Square: 8.93693; D.F.: 6; Significance: .1772; Min E.F.: .480; Cells with E.F. < 5: 12 of 12 (100.0 pct)

Eta = .22308 Cramer's V = .42277 Number of Missing Observations = 137

2 Rows of datas (top to bottom)
Count
Experimental Value
Row (percent)
Column (percent)

Conclusions

The predominant norms used to resolve dilemmas were based on anthropocentric concerns. The most common norms mentioned were concerns for the human quality of life, authority, property, and preservation of human life. Although these patterns were consistent, the shortcut dilemma that involved discussion of rule infractions prompted more to resort to authority or law norms.

The quartile results were all consistent with theoretical expectations of response distribution for a sample of adults. The most common stage of reasoning was stage 4 with stage 3 being the second most common. Stage 5, or postconventional reasoning was more common than the stage 2, preconventional reasoning.

The care orientation was found in some responses. This orientation was most commonly used by female respondents to resolve the shortcut dilemma as an expression of concern for the welfare and safety of others. This use of a care orientation would be more characteristic of stage 4 reasoning than stage 3 reasoning. This finding is consistent with the literature originally critical of Kohlberg's model and scoring procedures.

Our qualitative study confirms the appropriateness of the methods in field interviews of a culturally diverse audience. Cross-cultural psychology literature supports this premise and suggests that the variability between samples of Hispanic or foreign born individuals would increase if we conducted worldwide samples in the interviews: the representatives of Hispanic culture could be more representative if the non-native born Hispanic sample included residents of Spain, Caribbean nations, Central and South America.

The ethnicity variable should be identified as precisely as possible and the best operational measures should be identified to empirically test the efficacy of this methodology. Moreover, these results may not represent a consistent explanation of ethical values toward the natural environment or a theoretical developmental process. Our data cannot resolve this issue.

Future investigations on this subject might be to adopt a research design linking ethical reasoning with message comprehension and respondents behavior. In addition, cohort analysis and longitudinal data should be used to clarify the developmental process related to environmental ethical reasoning.

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