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Environmental Attitudes And Knowledge: An International Comparison Among Business Students

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While concern for the environment and efforts to improve it are today worldwide, it was in the U.S. where the environmental movement first took hold and where the earliest environmental efforts were made. America's preservationist tradition dates to 1892, the year of the founding of the Sierra Club. Its serious conservationist "movement" dates to the 1920s and the contemporary environmental movement to the 1960s and early 1970s. The first Earth Day was in April, 1970.

One of the first international meetings to be convened was the Stockholm Conference on the World Environment in 1972. This was followed during the 1980s by the United Nation's World Commission on Environment and Development and, more recently, by the U.N. Conference on Environment and Development held in Rio de Janeiro, Brazil during the summer of 1992.

The Roper Organization (1990) reports that most Americans place the environment high on the national agenda (fourth behind crime and drugs, AIDS, and the cost of health care) and perceive a proliferation of environmental problems at both the national and the local level. Who do people identify as being primarily responsible? Who are the major culprits?

> While the answer is that *everyone* shares some of the blame, certain parties are perceived to be greater contributors to the problem than others, and business is seen as perhaps *the* major cause (Roper, 1990: 15).

The environmental problem is increasingly seen not as a technological problem, although it has technological dimensions, but as a perceptual and behavioral problem. Conceptualized in this way, solutions to environmental problems lie in the alteration of human behavior. As Maloney and Ward noted twenty years ago, determining

> what the population "knows" regarding ecology, the environment, and pollution;

> how they feel about it; what commitments they are willing to make; and what commitments they do make . . . are necessary antecedent steps that must be made before an attempt can be made to modify critically relevant behaviors (1973: 584).

Because today's business students will be tomorrow's business leaders, it seems logical that the behavioral changes needed in business will be easier and more successful if business students begin their career ecologically knowledgeable, concerned, and oriented. To date, however, there is not much data available regarding what business students know, think, feel, and actually do regarding ecology and pollution compared to other students. One objective of the present study is to provide an international comparison of the environmental knowledge and attitudes of business administration students. A second objective is to provide a test of the theoretical linkages between sex role and environmental knowledge and attitudes as they pertain to the international situation.

Three studies have looked explicitly at the environmental orientation of business students. Shetzer, Stackman, and Moor (1991) administered the New Environmental Paradigm Scale (Dunlap and Van Liere, 1978; Albrecht et al., 1982; Noe and Snow, 1990) and a Business-Environment Questionnaire of their own design to 237 undergraduate business students enrolled in a second-year course in organizational behavior at the University of British Columbia. They conclude that, overall, the expressed attitudes of the sample are strongly proenvironmental and, hence, consistent with the emergence of a New Environmental Paradigm (Dunlap, 1989; Gillroy and Shapiro, 1986; Ladd, 1982).

The other two studies directly compared the knowledge and attitudes of business administration students with nonbusiness administration students. Synodinos (1990) compared students enrolled in his business courses with students enrolled in his environmental psychology course six years earlier and with the knowledge and attitudes of students from the early 1970s. He found that business students had less knowledge and less environmentally oriented attitudes than his environmental psychology students and those of students during the 1970s. He found that his business students of 1989 had knowledge and attitudes most similar to the general public during the 1970s.

Generalizing Synodinos' results, one might hypothesize that today's business students lag behind today's nonbusiness students. This hypothesis was tested by Benton (1994). Using the same instrument as Synodinos, Benton compared contemporary business administration with nonbusiness administration students at the same university. He found business administration students to know less, care less, and express less commitment to environmentally responsible behavior than students not majoring in business administration.

The Global Dimensions

Given that ecology is a global issue, it is important to ask not only how business students compare with nonbusiness students in the United States but how our students of business administration compare to students of business administration elsewhere. This is by no means a frivilous question. Smith (1992) reported that, already, when it comes to in-

novative thinking on environmentally sound business practices, the European business community has a better grasp of the issues than does the American business community. She also reported that Japan has already assembled a 100 year plan for sustainable development. Do our students lag internationally in this vitally important area of environmental concern?

Synodinos (1990) addressed this issue by comparing the non-United States citizens in his business classes (n=34) with the U.S. citizens (n=126). He hypothesized,

> U.S. students would be more informed about environmental issues than foreign students because information about the environment has been more prominent in the United States than in other countries (1990: 166).

Although he did not report actual scores, he did report that environmental knowledge among the U.S. students was significantly higher than among the non-U.S. students ($t(158)=3.03, p.<0.001$; *one-tailed*). He also reported that there were no significant differences between the U.S. citizens and the non-U.S. citizens on measures of concern and commitment.

For the present study, two samples of business administration students were compared; one from a major private midwestern university in the United States and one from the major university in Singapore.[1] The question is: are business administration students in the United States more knowledgeable, more concerned, and more action oriented than business administration students in Singapore?

The United States has a history of industrialization reaching back more than a century and a conservationist movement dating to the 1890s. It has undergone substantial ecological consciousness-raising for at least 30 years (Rachel Carson, credited with making ecology a household word, published *Silent Spring* in 1962). The United States Environmental Protection Agency was established in 1970 (the Agency's 1990 budget was $5.1 billion, which was 0.4% of the Federal Government's total budget, and it employed 17,123 persons, or 0.5% of the Federal Government's total employment). The Agency is now being considered as a cabinet level position in the Federal Government. American media have been hammering on environmental issues, our corporations have (of late) been cloaking themselves in eco-advertising, our schools are beginning to incorporate it into their curricula, and environmental books have made best-seller lists. In addition, and this is important when comparing the United States to Singapore, the effects of pollution, especially smog, have been all too apparent to many Americans.

Singapore is a city-state roughly the size and population of Chicago located on an island at the tip of the Malaysian peninsula, less than one hundred miles above the equator. It is among the world's most modern cities in some respects, but this is a very recent development. As late as the 1970s, construction of a 7-story building drew gawkers from all over the island. Farming and fishing count for very little there; the humid tropical climate keeps all but a few from pursuing outdoor and water-sports recreation; and it boasts no beaches of note. The major and vir-

[1] There are two universities in Singapore, both public institutions.

tually only polluting industry is petroleum refining. Car ownership is less than one-fifth the rate of the United States, and public transportation is an entirely acceptable alternative to owning a car. Thus, its orientation to ecological issues is quite different from that of the United States. Whereas the United States is one of the world's leading polluting nations, Singapore is more concerned over being a victim of, rather than a contributor to, environmental pollution. Furthermore, nobody expects Singapore to exercise leadership in this area.

Politically Singapore is far simpler than the United States, with a single layer of government, in contrast to the federal, state, local and regional layers which exist in the United States. Singapore's Ministry of the Environment, established in 1972, includes such functions as pollution control, sewage treatment, drainage, refuse collection, parks, public health and international environmental cooperation. In 1991 its staff numbered 7,200, or 11% of total government personnel; and its expenditures of $697 million amounted to 0.5% of total government expenditures. Singapore's geographic smallness eliminates conflicts among regional factions often found in America (e.g., as in the cross-purposes between Pennsylvania agriculture and the Delaware, Maryland and Virginia seafood industries regarding pollution of Chesapeake Bay). Thus, environmental concerns generally are not as controversial in Singapore as they are in the United States. Particularly in Singapore environmental initiatives are not so often at loggerheads with pressures for jobs, development and growth. However, the major newspaper, *The Straits Times,* is not grudging in the coverage it gives to environmental issues, and in the beginning years of the 1990s, the Singapore government has sponsored campaigns to foster "green" attitudes. Recently the Ministry of the Environment issued a policy plan, "Singapore Green Plan—Towards an Environmental City."

Educationally, the university from which the United States sample was drawn is like most other universities across the United States in that it has not taken significant steps to incorporate an environmental orientation into its curriculum (Ahna et al., 1992; Brough, 1992). It utilizes a core-curriculum format which requires all students to take a significant number of science, philosophy, and social science courses. There is no major in environmental science nor environmental issues but there is an environmental science minor for nonscience majors. The school of business does permit business majors to minor in nonbusiness subject areas but few business administration students do so. The school of business does not offer an undergraduate course of its own oriented to ecological issues. Environmental issues, if dealt with at all, must be integrated into regular business courses by the faculty that teach them. The situation is more or less the same at the Singaporean university where there are no environmental courses in the business school.

Given its long-term and often intense attention to ecology and environmentalism, it seems reasonable to expect that American college students would score higher on all matters of ecology than college students from Singapore. We hypothesized, *pace* Synodinos, that American students would score higher on meas-

ures of knowledge about environmental issues as well as on attitudinal measures of concern and commitment than would the Singaporean students.

One further dimension was considered, as well. The duality of the sexes is a fundamental fact with which different societies must and do cope (Hofstede, 1980). Every society recognizes many behaviors as more suitable to females or more suitable to males. These represent relatively arbitrary choices, mediated by cultural norms and traditions and transferred by socialization in families, schools, peer-groups, and through the media. While relatively arbitrary, there is a common trend among the vast majority of societies, both traditional and modern. Anthropology, sociology, psychology, and political science each attest to a predominant socialization pattern for men to be more assertive and for women to be more nurturing (Hofstede, 1980). As Hofstede further noted, however,

> the fact that an active feminist movement exists in a number of countries (albeit predominantly the wealthy ones) shows that some women, at least (and some men, too) no longer take the traditional pattern of male dominance for granted, and try to develop alternative role distributions (1980: 264).

Several theorists argue that differences exist between women and men in attitudes toward environmental issues and that such differences are based on sex-role socialization (Catton et al., 1978; Barbour, 1980; Merchant, 1989; *Hypatia,* 1991; but see Arcury et al., 1987 for a study that found no such differences). Milbrath states, for example,

> My own studies show that the pro-environmental protection stance on most policy issues is more likely to be supported by women than men; on average, 15 percent more women than men would support environmental protection (1989: 53).

And Benton (1994) reports that female undergraduate students are less knowledgeable about environmental issues than males but reveal greater concern and greater commitment to act in environmental responsible ways than do their male counterparts (see also, Gutteling and Wiegman, 1993; Lyons and Breakwell, 1994).

Hofstede (1980) reports that the male assertiveness-female nurturance pattern varies between countries. Some countries are more "masculine" and others more "feminine." Indeed, on his Masculinity Index the United States is a more "masculine" country than Singapore (1980). Higher scores on his Masculinity Index indicate respondents in a country (of both sexes) tend to endorse goals usually more popular among men while lower scores indicate they endorse goals usually more popular among women. In addition, High Masculinity is correlated with greater differences in values between men and women in the same jobs and a lower percent of women in professional and technical jobs (at least in the wealthier countries).

The data on which Hofstede based his analyses were collected in the late 1960s and early 1970s. Not surprisingly he makes no mention of the differences between men and women in their respective orientations toward nature. Accordingly, we expect to find that major differences do exist between women and men in attitudes toward environmental issues among the United States sample but not among the Singapore sample. Specifically, we expect that among the United States sample men will be more knowledgeable but that women will be more concerned

and more committed to action while there will be no differences on any of the four subscales for the Singapore sample.

Methodology

Measuring attitudes toward the environment is similar to measuring attitudes toward other issues. Generally, a variety of self-report scales are used on which respondents express their opinions and feelings and report on their behaviors and behavioral intentions. The environmental attitude research literature is dominated by single-item scales used to measure concern. In addition, a multiplicity of scales are used. Arcury comments, "even where multi-item scales are used to measure attitude there has been little effort to use the same scale in a number of studies to develop consistency and continuity in measurement" (1990: 301).

The Questionnaire

The questionnaire used here was developed by Maloney and Ward (1973) and refined by Maloney, Ward, and Braucht (1975). The refined and shortened version was used in the Synodinos (1990) and Benton (1994) studies referred to above.[2]

The questionnaire consists of four subscales designed to measure knowledge, concern, willingness to act, and present and past behavior regarding the environment and ecological issues. The concern, willingness to act, and actual behavior subscales each consist of ten true-false items. Approximately 50% of the items in these subscales are worded in a positive manner and 50% in a negative manner. Items from these three subscales are intermixed throughout the questionnaire. The knowledge subscale has fifteen 5-point multiple choice items and is presented after the concern, willingness to act, and actual behavior subscales. Following the knowledge subscale are demographic questions used for classification purposes (e.g., gender of respondent).

Each subscale comprises a range of questions and statements. Some items will likely receive a positive environmental response from most respondents while other items will receive such a response only from environmental enthusiasts and supporters. Higher scores represent more proecological attitudes or greater ecological knowledge.

The knowledge subscale measures specific factual knowledge related to ecological issues. It ranges from general items, such as asking how ecology as a field of study is best described, to specific questions, such as asking the identity of the most common sources of water and soil pollution. The concern subscale measures the degree of emotional response an individual has about ecological issues. Items such as "It frightens me to think that much of the food I eat might be contaminated with pesticides," and "The whole pollution issue has never upset me too much since I feel it's somewhat overrated" are included in this subscale.

There are two subscales designed to measure the respondent's com-

[2] The instrument used in the present study is available from the authors. Interested persons can contact Professor Raymond Benton, Jr., Department of Marketing, Loyola University Chicago, 820 North Michigan Avenue, Chicago, IL 60611.

mitment to proenvironmental action. The first measures what the respondent says he or she is willing to do in reference to environmental issues and problems. This subscale includes items such as "I'd be willing to ride a bicycle or take the bus to work in order to reduce air pollution," and "I would never join a group or club which is concerned solely with ecological problems." The second commitment subscale measures self-reported actual behavior toward the environment. It includes items such as "I have switched products for ecological reasons," and "I have never written a congressional representative/member of parliament concerning pollution problems."

The Maloney, Ward, and Braucht (1975) questionnaire was used with only minor modifications. Changes made by Synodinos (e.g., changing "congressman" to "congressional representative") were maintained for the U.S. portion of the study but were modified for the Singapore portion (e.g., "Member of Parliament"). In addition, certain vague words were dropped from some items. For example, items such as "I guess I've never actually bought . . ." were changed to "I've never actually bought . . ." The original item, "I feel fairly indifferent to the statement: the world will be dead in 40 years if we don't remake the environment" was changed to "I feel indifferent to the statement: The world will be dead in 100 years if we don't remake the environment." By changing 40 years to 100 years the concern for future generations, a fundamental orientation of environmentalists, would be better tested. It is doubtful that any respondent will be around in 100 years but most college-aged respondents can expect to still be alive in 40 years. Finally, one question asked respondents to identify the name of a well-known group primarily interested in conservation issues. The alternatives presented were all American organizations and the correct identification was the Sierra Club. The Sierra Club is virtually unknown in Singapore. This question is the one on which the American sample most decisively surpassed the Singapore sample. It was dropped from this analysis in the interests of achieving a fair comparison between the two samples.

The Samples

The samples for this study were drawn from undergraduate business majors at the National University of Singapore and at Loyola University Chicago. These two universities were used as a matter of convenience. Yet there are significant similarities between the two cities and both universities draw their student body predominantly from their local communities so it is a legitimate comparison. Further, the comparison with Singapore is significant as it is one of the vaunted "little tigers" of Asia and may be indicative of the environmental orientation in a region of the world that is rapidly developing and in years to come will be producing and consuming an increasing share of the world's output.

One-hundred eleven second-year business administration students at the National University of Singapore responded to the questionnaire. The students, 67 females and 44 males, are equivalent to juniors in the American college and university sys-

tem. The average age of the sample was 20.8 years. All but a few were of Chinese background. The questionnaire was presented in English, the language of tertiary education in Singapore.

The U.S. sample was obtained from Loyola University Chicago. A systematic random sample of the student body was collected using the current student directory as the sample frame. For the present analysis, only upper-division business majors (n=85) are considered. There were 35 juniors and 50 seniors; 34 females and 51 males; and the average age of the sample was 21.5 years. Seventy percent of the sample were Caucasian and 13% Asian. The remaining 17% were Black, Hispanic, or Native American. One student did not respond to the ethnic background question. There were no foreign students in the subsample.

Results

The general hypothesis guiding the analyses was that, on each of the four environmental knowledge and attitude scales, the American students would outscore Singaporean students. However, the data do not support this hypothesis on the knowledge scale, the concern scale, nor the willingness to act scale (see Figure I and Table 1). On the knowledge and the concern subscales the Singapore sample actually scored higher, although the higher scores are not statistically significant. The mean score on the willingness to act scale for the United States sample was higher, but this difference is not statistically significant. Only on the actual behavior subscale was the mean score for business administration students in the United States significantly higher than the mean score for the business administration students in Singapore (see Table 1 and Figure I).

Thus, the United States sample falls short of what we could hope for, if not expect. Examined more closely, their performance in comparison with their Singaporean counterparts is even weaker. The sections addressing respondents' willingness to act and reported behavior, on which the United States sample scored more strongly, to a great extent may simply reflect the relative possibilities of participation. For example, one item in the willingness to act subscale[3] and three items in the actual behavior subscale[4] refer to ecologically-based activities of which there are virtually none in Singapore, as yet. There is not much in the way of domestic environmental organizations for the Singaporeans to join, meetings to attend, or publications to which they can subscribe.

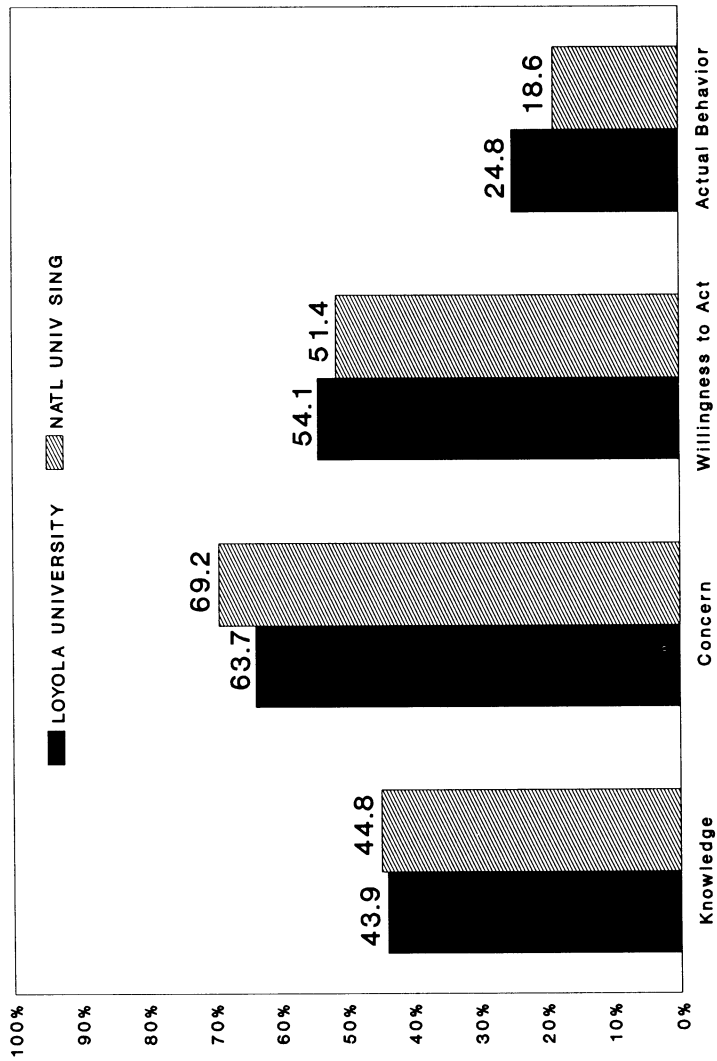
Two questions, one each in the willingness to act subscale and the actual behavior subscale, ask whether the respondent is willing to write, or

[3] Item 4: I would never join a group or club which is concerned solely with ecological issues.

[4] Item 17: I have attended a meeting of an organization specifically concerned with bettering the environment; Item 26: I have never attended a meeting related to ecology; Item 29: I subscribe to an ecological publication.

[5] Respectively those were Item 22: I'd be willing to write my (congressional) (parliamentary) representative weekly concerning ecological problems; and Item 8: I have never written a (congressional representative) (member of parliament) concerning pollution problems.

Figure I: Percentage of Maximum for Each Subscale



	LOYOLA UNIVERSITY CHICAGO $n=85$	NATIONAL UNIVERSITY OF SINGAPORE $n=111$	*d.f.*	*t*-Statistic	*prob.*- One Tailed
KNOWLEDGE	43.87 (15.71)	45.75 (13.43)	194	-0.906	0.183
CONCERN	63.65 (25.58)	69.19 (21.87)	194	-1.633	0.052
WILLINGNESS TO ACT	54.12 (23.82)	51.35 (23.14)	194	0.819	0.207
ACTUAL BEHAVIOR	24.82 (19.49)	18.56 (15.07)	194	2.538	0.006

Table 1: Mean scores (standard deviations) for each subscale. The range for the knowledge subscale is 0-14; for each of the other three subscales the range is 0-10. Scores reported are expressed as a percentage of the maximum possible for each subscale to facilitate comparison. Higher scores signify more pro-environmental attitudes and knowledge.

has ever written their congressional representative/member of parliament concerning ecological or pollution problems.[5] Outspokenness on issues, such as writing to one's Member of Parliament, is viewed differently in Singapore from how it is in the United States. While it is a much encouraged (if not highly practiced) behavior in the United Staes, the Asian culture does not encourage it.

Finally, two questions in the actual behavior subscale asked about respondents' participation in community volunteer work.[6] Community volunteer work is not as common in Singapore as it is in the United States, which differs from most places in the world in its emphasis on public-spiritedness.

On each of these eight questions the Singaporean sample did worse than the United States sample. If these questions are dropped from the analysis, the mean score on the willingness to act subscale is the same for both samples and the higher score for the United States sample on the actual behavior subscale is no longer statistically significant (see Table 2).

Gender Differences

We expected to find that among the United States sample the mean score for men would be higher on the knowledgeable subscale than for women but that the mean score for women would be higher on all three of the other subscales. We also expected to find no differences between men and women on any of the subscales for the Singapore sample.

[6] Item 11: I have contacted a community agency to find out what I can do about pollution; Item 23: I have never joined a cleanup drive.

	LOYOLA UNIVERSITY CHICAGO $n=85$	NATIONAL UNIVERSITY OF SINGAPORE $n=111$	*d.f.*	*t*-Statistic	*prob.*- One Tailed
ABBREVIATED WILLINGNESS TO ACT	57.65 (25.16)	57.66 (25.29)	194	-0.003	0.499
ABBREVIATED ACTUAL BEHAVIOR	37.65 (31.72)	34.01 (32.12)	194	0.790	0.215

Table 2: Scores represent mean scores (standard deviations) for subscales when items have been removed from the Willingness to Act and the Current Behavior subscales, as indicated in the text. The range for the Knowledge scale is 0-14; it is 0-10 for the Concern subscale, 0-8 for the Willingness to Act subscale, and 0-4 for the Current Behavior subscale. Scores reported are expressed as a percentage of the maximum possible for each subscale to facilitate comparison. Higher scores signify more proenvironmental attitudes and knowledge.

For the United States sample, our hypotheses are supported by the scores on the knowledge scale where the females' lower mean score is, indeed, significant. American males scored lower on the three attitudinal scales but the differences are not significant (see Table 3). For the Singapore sample, however, females scored higher on all four subscales. Only on the willingness to act subscale is the difference statistically significant.

Discussion

Our results only partially support hypotheses developed from Synodinos (1990). He found that his United States students were more knowledgeable than his noncitizen students. The present study finds that U.S. students are not more knowledgeable about environmental issues than Singaporean students. But like Synodinos, the present study found that U.S. students are neither more concerned nor more committed than counterparts from foreign backgrounds.

Further, we found that certain notions regarding differences in environmental outlook along gender lines are only partially supported. Our American females knew less but did not care more or express any greater willingness to act nor report more environmentally oriented behavior than American males. The Singaporean females, on the other hand, outscored the Singaporean males on every scale, and significantly so on willingness to act.

The failure to confirm gender-related hypotheses derived from Hofstede (1980) may be because the samples in the present study surveyed only upper division business stu-

	LOYOLA UNIVERSITY CHICAGO UPPER DIVISION BUSINESS MAJORS				
	FEMALE $n=34$	MALE $n=51$	*df*	*t*- Statistic	*prob.*- One Tailed
KNOWLEDGE	39.50 (13.98)	46.78 (16.25)	83	-2.138	0.018
CONCERN	67.94 (24.09)	60.78 (26.37)	83	1.268	0.104
WILLINGNESS TO ACT	56.76 (25.31)	52.35 (22.86)	83	0.835	0.203
ACTUAL BEHAVIOR	27.06 (21.68)	23.33 (17.96)	83	0.862	0.196

	NATIONAL UNIVERSITY OF SINGAPORE SECOND-YEAR BUSINESS MAJORS				
	FEMALE $n=67$	MALE $n=44$	*df*	*t*- Statistic	*prob.*- One Tailed
KNOWLEDGE	46.80 (12.64)	44.16 (14.55)	109	1.016	0.156
CONCERN	69.55 (20.70)	68.64 (23.78)	109	0.215	0.415
WILLINGNESS TO ACT	54.78 (21.27)	46.14 (25.08)	109	1.949	0.027
ACTUAL BEHAVIOR	20.15 (13.76)	16.14 (16.74)	109	1.378	0.086

TABLE 3: Scores represent mean scores (standard deviations). The range for the Knowledge scale is 0-14; it is 0-10 for each of the other three subscales. Scores reported are expressed as a percentage of the maximum possible for each subscale to facilitate comparison. Higher scores signify more proenvironmental attitudes and knowledge.

dents. Benton (1994) found that the hypothesized male-female differences for United States undergraduate students were manifest when the data include lower division as well as upper division students. Hofstede noted, "The corporation belongs to the masculine world" (1980: 284). If the school of business also belongs to the masculine world then business students might well be expected to become more homogeneously masculine in Hofstede's sense as they progress through the university. Hence, hypothesized differences would not be manifest among upper division students. It is, of course, also possible that this lack of support simply indicates shortcomings in this family of gender-related hypotheses.

In future studies comparing attitudes in an international context, researchers should take care in constructing the questionnaire. In the present case, questions appropriate for Americans were not necessarily appropriate for the Singaporese. Attention must be paid to linguistic differences but as well to what may or may not be significant and meaningful at the local level. Future studies would do well to compare business students with nonbusiness students in non-United States situations. As discussed, American business students are less environmentally aware than nonbusiness students (Benton, 1994). Our results suggest that American business students are no more environmentally aware than those in Singapore. Are Singapore business students also less environmentally knowledgeable and concerned than the Singapore students not majoring in business? Similarly, future studies concerned with sex role socialization and environmental knowledge and attitudes in an international context should include lower-division as well as upper-division students and business as well as non-business students.

This study points out the importance of, as well as the potential for, increasing the environmental/ecological component in business curricula. As recently as 1990 Cohen could write,

> Environment—it's the watchword for the '90s. Everyone is involved in one capacity or another—law schools study toxic torts, schools of public administration research ways to clean up the environment and corporations have developed managerial positions devoted primarily to environmental concerns. But what are the business schools—the incubators for tomorrow's managers—doing about the environment? The answer is very little . . . (1990: 30).

The American Assembly of Collegiate Schools of Business recognizes the importance of environmental factors in creating and delivering a high quality curriculum. In their Final Report they state,

> Both undergraduate and MBA curricula should provide an understanding of perspectives that form the context for business. Coverage should include ethical and global issues, the influence of political, social, regulatory, *environmental*, and technological issues, and the impact of demographic diversity on organizations (Final Report, 1991: 1; emphasis added).

Business schools are beginnning to take heed. The Management Institute for Environment and Business reported that when the U.S. Environmental Protection Agency began surveying the quality of environmental management education in 1987,

> not a single business school was offering an environmental course. Now, five years later, approximately 100 schools are either offering new environmental courses or incorporating environmental issues into their curricula. Seven schools have created or are creating a Joint Degree Program between natural resource programs and busi-

ness schools or developing a concentration/certificate program within the business school for environmental management (Management Institute for Environment and Business, 1992).

As we approach the close of the 20th century, global levels of pollution and environmental degradation are at their highest in the entire span of human history, and indications are that they will continue to increase. Ultimately, this unprecedented assault on the ecosphere originates in two fundamental causes: (1) a vastly greater human population than ever before, and (2) history's highest rates of per-capita consumption in developed countries, and rising consumption (and expectations of greater consumption yet to come) in developing countries (Durning, 1992).

The blame for environmental problems that public opinion polls find falling on business is only partly deserved, as any business exists only to satisfy consumer demand. However, since the 1920s the American economic system has come to be predicated on growth based on ever increasing consumption (the "Good Life" or the "American Dream") (Funkhouser and Rothberg, 1987), an ethos which our government, corporations and media have intensively promoted for the past half century and now are exporting to the world at large—an innovation in values unique in world history (Funkhouser, 1989).

Business managers and executives can do little about the rate of increase in population, other than develop and market new products and services to help the public contain it. However, they can do many things that will help to diminish environmentally harmful effects of consumption (or, some would say, overconsumption). Corporations can pursue environment-friendly products, production methods, waste disposal, packaging and distribution. They can highlight conservationist themes in their advertising and public relations. Indeed, many corporations have already embarked on such programs, though often they are confusing, misleading, or outright illegal (Davis, 1992) and undertaken only after the spur of government regulation or court action has been applied. Toning down the promotion of consumption per se would be a helpful measure as well. However, it is difficult to see how this could happen in the framework of the American economic system, given our current media, corporate and financial structures.

According to Durning (1992), more thoughtful approaches to consumption are mandatory if we wish to preserve a world worth inhabiting. A necessary first step in that direction would be greater environmental awareness and concern among our corporate leaders, who of all segments of American society are in one of the best positions to modify the consuming behavior of the general public in ways that will benefit the ecosphere. The results of this study suggest that American business schools have considerable latitude to expand and improve their contributions in this area.

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