Do Business Schools Change Students' Values Along Desirable Lines?
A Longitudinal Study

Venkat R. Krishnan
Xavier Labour Relations Institute, Jamshedpur, India

Abstract. *The impact of a two-year residential fulltime MBA program on students' value systems was studied using a longitudinal design and data collected over five years. Value systems were measured when students entered the program, and again as soon as they graduated. Sample consisted of 229 students from three consecutive graduating classes of a business school in India. Results of matched sample t-tests show that self-oriented values like a comfortable life and pleasure become more important and others-oriented values like being helpful and polite become less important over two years. The moderating role of sex and functional specialization are also analyzed. The Indian Weltanschauung's yardstick of oneness is used to discuss whether the changes in value systems are along desirable lines.*

Management education is traditionally seen as a means to facilitate learning of job-related behaviors in order to improve performance. The focus has been on teaching facts, modifying attitudes and behaviors, and developing skills. Attention has been devoted to analyzing whether knowledge that is imparted in business schools should focus more on theory or on applications (Huff, 2000). Human values as a component of management education continue to be an ignored domain of investigation. The emphasis of education has generally been more on knowledge production than on value inculcation. Values have been fairly ignored by management education programs, most probably because values in general are relatively more difficult to influence or modify. Values, however, form the core of our personality, and influence the choices we make, the people we trust, the appeals we respond to, and the way we invest our time and energy (Posner & Schmidt, 1992). It is necessary that values be given their due importance within the function of management education.

The changing environment that business schools face has made it necessary to have a look at the impact of education on students (Rynes & Trank, 1999). There has however been a shortage of empirical studies in this area, though there is widespread recognition of the importance of strengthening the collegiate business education environment (Pearce II, 1999). Frost and Fukami (1997) in their introduction to the special research forum on teaching effectiveness in the organizational sciences called for more empirical research on the educational process. The study reported in this paper looked at the change in value systems of MBA students over the entire period of two years of the program. It is only by studying how

management education currently affects the value systems of students that we can deliberate upon the objectives of management education in future.

Value System

Rokeach (1973: 5) defined a value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence." A belief concerning a desirable mode of conduct is an instrumental value and a belief concerning a desirable end-state of existence is a terminal value. If a person values freedom as an end-state of existence, it means that he or she believes that freedom is preferable to slavery. Rokeach considered terminal values to be of two kinds—those that are self-focused called personal values, and those that are others-focused called social values. Instrumental values are also of two kinds—those which when violated arouse pangs of conscience or feelings of guilt for wrongdoing called moral values, and those which when violated lead to feelings of shame about personal inadequacy called competence or self-actualization values.

Values can be looked upon as being hierarchical in nature, leading to the idea of a value system. Rokeach (1973: 5) defined a value system as "an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance." A set of rank-ordered values is called a value system. Values are heavily intertwined and therefore looking at a person's values separately and independently of one another cannot meaningfully explain attitudes and behaviors. That a person values happiness does not say much that is unique about that person, for most human beings value happiness. What matters is how much a person values happiness in comparison with the other things that he or she values. If one knows that a person values happiness more than self-respect, one is able to have a more accurate idea of that person. Only the rank ordering of values or the value system can capture the unique value configuration of an individual. It is not the values by themselves that matter, but it is the hierarchical value system that matters (Rokeach & Ball-Rokeach, 1989).

Values are the most abstract of the social cognitions, and hence they serve as prototypes from which attitudes and behaviors are manufactured. Cognitions, and therefore values, also guide individuals about which situations to enter and about what they should do in those situations. Within a given situation, the influence flows from abstract values to midrange attitudes to specific behaviors. This sequence is called value-attitude-behavior hierarchy (Homer & Kahle, 1988). In specific situations, only a subset of values is made active, those that are seen as relevant to the salient alternative actions. For example, valuing equality might favor donating to charity and oppose purchasing a luxury item, whereas valuing a comfortable life might have the reverse influence. Not all activated values have equally strong impacts on behavior. The strength of impact depends on importance of the value in the person's hierarchy. The choice of a behavior alternative is guided by the interplay of the influences of the activated values. It is the relative importance for a person of the values favorable to and opposed to a behavior that guides action (Schwartz & Inbar-Saban, 1988).

Value systems have been found to predict several outcomes including shopping selections (Homer & Kahle, 1988) and weight losses (Schwartz & Inbar-Saban, 1988). Values influence job choice decisions, job satisfaction, and commitment (Judge & Bretz, 1992). Blickle (2000) found that work values predicted the frequency of use of influence strategies measured one year later. The values of achievement, associates (defined as "work

in which you are one of the gang"), creativity, intellectual stimulation, and variety were positively related to rational persuasion. In addition, career and management (defined as "have authority over others") were positively related to pressure strategy; prestige was positively related to ingratiation; and career and prestige were positively related to upward appeal. Since management is essentially an influencing activity, values would predict managerial choices.

Several studies have demonstrated empirically how values affect personal and organizational effectiveness (Meglino & Ravlin, 1998; O'Reilly, Chatman, & Caldwell, 1991). Perceptual organization plays a role in linking values to choice behavior (Ravlin & Meglino, 1987). Values influence the selection and interpretation of external stimuli, and thus affect one's perceptual process. The future attitudes and behaviors of MBA graduates would therefore depend on their value systems when they leave business schools. It is thus worthwhile looking at how management education changes the value systems of MBA students.

Changing Value Systems

Value systems tend to form early in life and are very stable. Major longitudinal studies of values have in general showed their remarkable stability (Rokeach & Ball-Rokeach, 1989). Lubinski, Schmidt, and Benbow (1996) observed that in a sample of gifted adolescents, values were remarkably stable over a 20-year period. Dominant value orientation either remained unchanged, or moved to an adjacent value. Oliver (1999) found that the overall personal value structure of the American manager did not change in three decades.

Values are enduring beliefs, and therefore they are very difficult to change. One who values obedience is unlikely to start believing that it is preferable to be disobedient than be obedient. Value systems, however, can be changed with relatively greater ease. Change in value system requires rearrangement of the relative importance given to various values. For example, one who values pleasure more than self-respect could be convinced over time that self-respect is more important than pleasure. Studies have demonstrated that the relative importance of different values to a person can be changed (Rokeach, 1973; Schwartz & Inbar-Saban, 1988). Ball-Rokeach, Rokeach, and Grube (1984) made an effort to change the rankings of the equality, freedom, and aesthetics values, by utilizing a broadcast television program. Rankings of the targeted values changed for those who watched, thus suggesting that adult socialization, such as that which occurs through the media, or through organizational processes, can in fact change values in a meaningful way.

The method of value self-confrontation can be used to change peoples' value systems and thereby their behavior. This method has been applied successfully to influence such behaviors as contributing money to social welfare programs and supporting anti-pollution measures. Schwartz and Inbar-Saban (1988) demonstrated that people's behavior could be changed by changing the value priorities underlying that behavior. Using an experimental manipulation, they found that an increase in the relative importance of wisdom over happiness (both terminal values) resulted in significant amount of weight loss. The first step in value self-confrontation is to get people to become aware of their value systems. Learning that there is a contradiction between one's value priorities and one's ideal self-conception as a moral or competent person gives rise to self-dissatisfaction with one's value rankings. The ideal self-conception is based on the value system of a positive reference group. In order to reduce self-dissatisfaction, people change their value systems and consequently their value-related attitudes and behaviors. They try to make these elements more consistent with the self-conceptions as moral and competent persons that they have learned to prefer.

It is thus possible to change value systems over time using an appropriate intervention. The MBA program is one such intervention. Management education revolves around social issues and interpersonal relationships in a way that could conflict with business students' pre-existing values (Rynes & Trank, 1999). The MBA program, besides exposing students to a wide range of perspectives, also adopts an application-oriented approach that could result in students questioning some of their existing beliefs. The two years of education as an MBA student would therefore result in a change in value system. This being an exploratory study, I did not hypothesize any specific nature or direction of change, but only expected an overall change in value system at the end of two years.

Methodology

Data for this study was collected from three consecutive batches of students of a two-year residential MBA program at a prominent business school in India. The students were requested to answer a survey to measure their terminal and instrumental value systems twice—while entering the program, and again while graduating from the program after two years. The total number of entering students in a year was 130, and initial data was collected from 383 students from the three years together. Only 239 students from the three years together answered the survey at the time of graduation. The final usable matched sample size was 229 after excluding responses that had partial missing values. Of the 229 students, 93 were females and 136 were males; 108 students specialized in human resources (HR) and 121 students specialized in functions other than HR.

Rokeach's Value Survey

I used Rokeach's (1973) Value Survey for measuring value system. This is the most commonly used instrument for measuring value system. It has two lists of values arranged alphabetically—one consisting of 18 terminal values and the other consisting of 18 instrumental values. Each value is presented along with a brief definition in parenthesis and respondents are asked to arrange the values in each set in order of importance to and as guiding principles in their life, thereby recording their value systems. The Value Survey has been found to be both reliable and valid. All the values are socially desirable ones, but no significant relationship has been found between value rankings and the tendency to respond in a socially desirable manner. Schwartz and Bilsky (1990) did a survey based on Rokeach's 36-value English version, which lent evidence for the universality of elements of a theory of the content and structure of human values. Shopping selections (Homer & Kahle, 1988), and weight losses (Schwartz & Inbar-Saban, 1988) were predicted by the importance ratings of values.

Data Analysis

The differences in value rankings between the time of entering and the time of leaving the MBA program were analyzed in two different ways. The first approach adopted was to arrive at two aggregate value systems (one terminal and one instrumental) for each of the two periods (entering and leaving the program) and then compare them across the two periods. The median rank assigned to each terminal value by the students while entering the MBA program was calculated. The values were arranged in ascending order of median ranks to obtain the aggregate terminal value system at the time of entry (where two values had the same median rank, the mean was used to break the tie). The aggregate terminal value system

at the time of leaving after two years was similarly calculated. The entire process was repeated to get the aggregate instrumental value systems at the time of entry and at the time of leaving. The second approach used was to calculate the change in rank for each value over two years and test if the change was significantly different from zero.

Results

The aggregate terminal and instrumental value systems of students while entering and while leaving the MBA program are given in Tables 1 and 2. The largest difference (at least 2 in median and 2 in aggregate rank) in value rankings between the two periods was found for four terminal values—a comfortable life, an exciting life, pleasure, and family security—and for two instrumental values—imaginative and self-controlled. The relative importance given to a comfortable life, an exciting life, pleasure, and being imaginative increased over the two-year period, while the relative importance given to family security and being self-controlled decreased.

A comparison of the terminal value systems instead of individual value rankings indicated that students at the time of leaving the program considered an exciting life more important than wisdom, family security, true friendship, and mature love, while their relative priority for an exciting life was just the reverse when they joined the program. They also considered a comfortable life more important than social recognition and mature love; and pleasure more important than a world at peace and a world of beauty at the time of leaving the program, while their relative priorities were just the reverse when they joined the program. Similarly, students at the time of leaving the program considered family security less important than freedom, an exciting life, and wisdom, while their relative priority for family security was just the reverse when they joined the program.

Similarly, a comparison of the instrumental value systems indicated that students at the time of leaving the program considered being imaginative more important than being self-controlled, cheerful, and helpful; and being intellectual more important than being courageous, loving, and self-controlled, while their relative priorities were just the reverse when they joined the program. In addition, students at the time of leaving the program considered being self-controlled to be less important than being imaginative, logical, and intellectual; and being loving to be less important than being ambitious, courageous, and intellectual, while their relative priorities were just the reverse when they joined the program.

The second approach for analyzing differences in rankings between the two periods looked at each of the 36 values (18 terminal and 18 instrumental) separately. For each value, I calculated the difference score for each respondent by taking the simple difference between the ranks given by the respondent for that value while entering and while leaving the program. I did a t-test for each value separately to see if the difference score was significantly different from zero. The t-test results are given in Table 3. Ranks given by students increased significantly ($p<0.05$) over the two years in the case of a comfortable life, an exciting life, pleasure, social recognition, and being capable, imaginative, independent, and intellectual. They also gave significantly less importance to a world at peace, a world of beauty, family security, inner harmony, national security, true friendship, wisdom, and being helpful, loving, and polite than what they gave two years earlier.

Sex and Function as Moderators

I did an analysis of variance of the difference score for each value across sex. Table 4 presents the results for those values for which the change in rank was different between female and male students at 0.10 level of significance. Results of t-tests to see if the difference scores for either sex are significantly different from zero are also presented in the table. Change in rankings given to three values—an exciting life, happiness, and being ambitious—differed significantly ($p<0.05$) between female and male students. Two years of management education enhanced the preference for an exciting life in both female and male students, but the change was significantly higher in the case of male students. In addition, female students gave a higher ranking for happiness while male students did not, and unlike female students, the male students gave a higher rank for being ambitious.

Similarly, I did an analysis of variance of the difference score for each value across function (HR versus non-HR). Table 4 includes the results for those values for which the change in rank was different between HR and non-HR students at 0.10 level of significance. Results of t-tests to see if the difference scores for either function are significantly different from zero are also presented in the table. The analysis revealed significant ($p<0.05$) difference between HR and non-HR students in the case of one value—loving. Non-HR students gave less importance to being loving at the end of two years, while there was no such change in the case of HR students.

I also did an analysis of variance of the difference scores across sex and function together. The results for those values for which the change in rank was different across the four categories at 0.10 level of significance are presented in Table 5. Change in value rankings varied significantly ($p<0.05$) across the four categories (two categories of sex by two categories of function) in the case of three values—equality, ambitious, and obedient. Equality was given a higher ranking by female HR students and a lower ranking by male HR students. Male non-HR students gave a higher rank to being ambitious, and male HR students gave a lower rank to being obedient.

I also tested to see if the ranks assigned to the various values while entering and while leaving, were different between female and male students and between HR and non-HR students. Each of the 36 values (18 terminal and 18 instrumental) was taken up for analysis separately. The nonparametric Median test and Wilcoxon rank sum test (with normal approximation and continuity correction) were used to test for a statistically significant difference in value rankings given by female and male students. Differences were treated as significant only if both the tests revealed significance at 0.05 level. The results for those values that showed significant difference are presented in Table 6. While entering the program, female students considered self-respect, independent, and loving more important, and social recognition less important than male students. Female students, while leaving the program, considered happiness, inner harmony, and loving more important, and a comfortable life, an exciting life, social recognition, ambitious, and polite less important than male students. While entering the program, HR students considered independent more important, and pleasure and clean less important than non-HR students. HR students, while leaving the program, considered mature love and being loving more important than non-HR students.

Discussion

The findings of this study enhance our knowledge of the impact of management education. Knowing the values that are being inculcated in business schools is the first step toward bringing about change in business education along desired lines.

Results indicate that the relative importance given to a comfortable life, an exciting life, pleasure, social recognition, capable, imaginative, independent, and intellectual increase during the two-year period of management education. At the same time, the relative importance given to a world at peace, a world of beauty, family security, inner harmony, national security, true friendship, wisdom, helpful, loving, and polite decrease. There is thus a clear change in value system of MBA students with self-oriented values like a comfortable life and pleasure becoming more important, and others-oriented values like being helpful and polite becoming less important. This is probably a cause for concern since the corporate world is likely to be interested in managers whose relative ordering of values is just the reverse. An MBA program that reduces the relative importance given to values like being helpful and polite might find it extremely difficult to market its program and its graduates to business organizations.

It is interesting to note that management education increases the relative importance given to freedom, happiness, and being intellectual in the case of female students, while there is no significant change in these value rankings in the case of male students. Male students, on the other hand, give greater importance to being ambitious and less importance to wisdom, while there is no such change in the case of female students. Similarly, coming to HR versus non-HR students, being loving goes down in importance only for non-HR students and being intellectual increases in importance only for HR students. Sex and function also appear to interact in the case of both equality and obedient. Decrease in importance for equality and obedient is seen only in the case of female non-HR and male HR students.

Is the Change Desirable?

The objective of management education should be to take students to a higher plane and lift them to their better selves (Burns, 1978). The change has to be such that it unites people in the pursuit of some higher purposes. Leadership is authentic only if it takes followers to a better place and not to a worse place. I used the Indian Weltanschauung to analyze whether the change in values brought about by management education is desirable or not, because the study was done in India. Burns argued that leadership involves focusing on near-universal values, and the Indian Weltanschauung provides such a near-universal basis. The most prominent feature of the Indian Weltanschauung is the ideal of oneness of all beings in the universe (Radhakrishnan, 1927).

According to the Indian Weltanschauung, all beings are evolving toward the state wherein they will realize their oneness with all other beings. The beings that are more evolved progress toward oneness consciously while the less evolved beings progress unconsciously. Progressing toward the state of oneness is defined as going up in the ladder of evolution. Thus, people go upward or to a higher state if they get closer to the state of perceiving the oneness of all beings. Getting into a state of greater selfish isolation from others would be the exact opposite of going toward the state of oneness.

The findings of this study show that self-oriented values like a comfortable life and pleasure become more important, and others-oriented values like being helpful and polite become less important because of completing two years of management education. If the

yardstick of oneness that is the basis of the Indian Weltanschauung is used, it is clear that the change in value systems of MBA students is not in the direction of taking them upward or to a higher state. On the contrary, management education appears to make people more selfish and less concerned about others. Therefore, the change in value systems is not along desirable lines.

Conclusion

Demands of the corporate world on business schools have been constantly changing and have of late become more exacting. The findings of this study provide some preliminary evidence on the changes in value systems that are caused by management education. Self-oriented values become more important and others-oriented values become less important because of completing two years of management education. The changes do not appear to be in a direction that business organizations would want. Business schools need to look at these trends and take steps to address students' value systems in a more effective way. The objective of management education should be to take students to a higher plane by transforming their value systems and lifting them to their better selves (Burns, 1978). Students need to be taken upward by enhancing their perception of oneness with others, which is the yardstick for defining a higher state according to the Indian Weltanschauung. Business schools seem to be doing the exact opposite.

References

Ball-Rokeach, S.J., Rokeach, M., & Grube, J.W., *The great American values test: Influencing behavior and belief through television*, New York: Free Press, 1984.

Blickle, G., "Do work values predict the use of intraorganizational influence strategies?" *Journal of Applied Social Psychology*, 30 (No 1, 2000), 196-205.

Burns, J.M., *Leadership*, New York: Harper & Row, 1978.

Frost, P.J., & Fukami, C.V., "Teaching effectiveness in the organizational sciences: Recognizing and enhancing the scholarship of teaching," *Academy of Management Journal*, 40 (No 6, 1997), 1271-1281.

Homer, P.M., & Kahle, L.R., "A structural equation test of the value-attitude-behavior hierarchy," *Journal of Personality and Social Psychology*, 54 (1988), 638-646.

Huff, A.S., "Changes in organizational knowledge production (1999 Presidential Address)," *Academy of Management Review*, 25 (No 2, 2000), 288-293.

Judge, T.A. and Bretz, R.D., "Effects of work values on job choice and decisions," *Journal of Applied Psychology*, 77 (1992), 261-271.

Lubinski, D., Schmidt, D. B., & Benbow, C. P., "A 20-year stability analysis of the study of values for intellectually gifted individuals from adolescence to adulthood," *Journal of Applied Psychology*, 81 (1996), 443-451.

Meglino, B.M. and Ravlin, E.C., "Individual values in organizations: Concepts, controversies, and research," *Journal of Management*, 24 (No 3, 1998), 351-389.

O'Reilly III, C.A., Chatman, J., & Caldwell, D.F., "People and organizational culture: A profile comparison approach to assessing person-organization fit," *Academy of Management Journal*, 34 (1991), 487-516.

Oliver, B.L., "Comparing corporate managers' personal values over three decades, 1967-1995," *Journal of Business Ethics*, 20 (No 2, 1999), 147-161.

Pearce II, J.A., "Faculty survey on business education reform," *Academy of Management Executive*, 13 (No 2, 1999), 105-109.

Posner, B.Z., & Schmidt, W.H., "Values and the American manager: An update updated," *California Management Review*, (Spring 1992), 80-94.

Radhakrishnan, S. (1927). *Indian philosophy (Volume 1).* New Delhi: Oxford University Press.

Ravlin, E.C., & Meglino, B.M., "Effect of values on perception and decision making: A study of alternative work values measures," *Journal of Applied Psychology*, 72 (No 4, 1987), 666-673.

Rokeach, M., *The nature of human values*, New York: Free Press, 1973.

Rokeach, M. and Ball-Rokeach, S.J., "Stability and change in American value priorities, 1968-1981," *American Psychologist*, 44 (No 5, 1989), 775-784.

Rynes, S.L., & Trank, C.Q., "Behavioral science in the business school curriculum: Teaching in a changing institutional environment," *Academy of Management Review*, 24 (No 4, 1999), 808-824.

Schwartz, S.H., & Inbar-Saban, N., "Value self-confrontation as a method to aid in weight loss," *Journal of Personality and Social Psychology*, 54 (No 3, 1988), 396-404.

Table 1

Aggregate Terminal Value Systems, Before and After (N=229)

Rank Value Before	Med	M	Value After	Med	M
1 A sense of accomplishment	5	5.68	A sense of accomplishment	4	5.68
2 Self-respect	5	5.68	Happiness	5	5.55
3 Happiness	5	5.94	Self-respect	5	5.86
4 Inner harmony	5	6.28	Freedom	6	6.79
5 Family security	6	6.68	Inner harmony	7	7.55
6 Freedom	7	7.03	An exciting life	7	7.76
7 Wisdom	7	7.27	Wisdom	8	8.12
8 True friendship	7	7.83	Family security	8	8.13
9 Mature love	9	9.30	True friendship	8	8.41
10 An exciting life	10	9.97	A comfortable life	9	8.83
11 Social recognition	10	10.03	Social recognition	9	9.13
12 A comfortable life	11	10.38	Mature love	9	9.52
13 A world at peace	13	11.38	Equality	13	11.83
14 Equality	13	11.93	Pleasure	13	12.35
15 A world of beauty	14	13.23	A world at peace	14	12.32
16 Pleasure	15	13.71	A world of beauty	15	13.98
17 National security	15	13.97	Salvation	16	14.41
18 Salvation	17	14.72	National security	16	14.80

Table 2
Aggregate Instrumental Value Systems, Before and After (N=227)

Rank Value Before	Med	M	Value After	Med	M
1 Honest	5	6.11	Honest	6	6.58
2 Responsible	6	6.48	Capable	6	6.94
3 Capable	7	7.79	Responsible	7	6.96
4 Independent	7	7.83	Independent	7	6.98
5 Broadminded	8	7.90	Ambitious	7	7.88
6 Loving	8	8.08	Broadminded	7	8.07
7 Courageous	8	8.26	Intellectual	8	7.99
8 Ambitious	8	8.37	Courageous	8	8.25
9 Self-controlled	8	9.03	Loving	8	8.84
10 Intellectual	9	9.18	Logical	9	9.39
11 Logical	9	9.65	Imaginative	9	9.45
12 Helpful	10	9.47	Self-controlled	10	9.59
13 Cheerful	10	9.78	Cheerful	10	9.72
14 Imaginative	12	10.80	Helpful	11	10.62
15 Polite	12	11.53	Polite	13	12.39
16 Forgiving	13	12.03	Forgiving	13	12.44
17 Clean	15	14.28	Clean	15	14.04
18 Obedient	16	14.44	Obedient	16	14.86

Table 3
T-Test for Difference in Ranks being Different from Zero

Terminal	M	Std Err	t Value	Instrumental	M	Std Err	t Value
A comfortable life	1.55	0.38	*** 4.08	Ambitious	0.49	0.35	1.40
An exciting life	2.21	0.35	*** 6.30	Broadminded	-0.16	0.33	-0.50
A sense of accomplishment	0.00	0.33	0.00	Capable	0.85	0.33	* 2.56
A world at peace	-0.94	0.33	**-2.81	Cheerful	0.06	0.36	0.16
A world of beauty	-0.76	0.28	**-2.65	Clean	0.23	0.27	0.86
Equality	0.10	0.32	0.31	Courageous	0.01	0.36	0.02
Family security	-1.45	0.33	***-4.46	Forgiving	-0.42	0.35	-1.21
Freedom	0.24	0.30	0.79	Helpful	-1.15	0.34	***-3.38
Happiness	0.39	0.29	1.33	Honest	-0.47	0.35	-1.33
Inner harmony	-1.28	0.35	***-3.64	Imaginative	1.35	0.35	*** 3.91
Mature love	-0.22	0.31	-0.70	Independent	0.85	0.37	* 2.33
National security	-0.83	0.27	**-3.05	Intellectual	1.19	0.40	** 2.98
Pleasure	1.36	0.31	*** 4.42	Logical	0.26	0.38	0.69
Salvation	0.32	0.32	0.99	Loving	-0.75	0.34	*-2.19
Self-respect	-0.18	0.29	-0.61	Obedient	-0.43	0.30	-1.41
Social recognition	0.90	0.31	** 2.94	Polite	-0.86	0.31	**-2.74
True friendship	-0.58	0.28	*-2.05	Responsible	-0.48	0.33	-1.44
Wisdom	-0.85	0.33	*-2.56	Self-controlled	-0.56	0.40	-1.40

N=229 (Terminal), 227 (Instrumental). † = p<0.10. * = p<0.05. ** = p<0.01. *** = p<0.001.

Table 4
Analysis of Variance of Change in Rank across Gender and Function Separately

	N	M	Std Err	t-value	N	M	Std Err	t-value	F-stat
			Female				Male		
An exciting life	93	1.30	0.57	* 2.29	136	2.83	0.44	*** 6.46	* 4.67
Freedom	93	0.94	0.46	* 2.02	136	-0.24	0.39	-0.60	† 3.66
Happiness	93	1.25	0.48	* 2.58	136	-0.20	0.36	-0.56	* 6.06
Wisdom	93	-0.14	0.50	-0.28	136	-1.34	0.44	**-3.04	† 3.16
Ambitious	91	-0.77	0.58	-1.32	136	1.33	0.42	** 3.17	** 9.00
Intellectual	91	2.09	0.54	*** 3.83	136	0.59	0.55	1.06	† 3.43
			HR				non-HR		
A world at peace	108	-1.62	0.50	**-3.24	121	-0.33	0.44	-0.75	† 3.76
Pleasure	108	1.98	0.46	*** 4.32	121	0.81	0.41	† 1.97	† 3.64
Intellectual	108	1.89	0.48	*** 3.97	119	0.55	0.62	0.89	† 2.82
Loving	108	-0.04	0.45	-0.08	119	-1.40	0.51	**-2.75	* 3.97

† = $p<0.10$. * = $p<0.05$. ** = $p<0.01$. *** = $p<0.001$.

Table 5

Analysis of Variance of Change in Rank across Gender and Function Together

	Fe male HR			Fe male non-HR			Male HR			Male non-HR			
	M	Std Err	t-value	M	Std Err	t-value	M	Std Err	t-value	M	Std Err	t-value	F-stat
An exciting life	1.10	0.65	† 1.70	1.81	1.16	1.55	3.63	0.73	*** 5.00	2.48	0.54	*** 4.58	† 2.12
Equality	1.06	0.50	* 2.13	-1.50	0.92	-1.63	-1.61	0.79	*-2.05	0.60	0.53	1.13	** 3.93
Happiness	0.99	0.60	1.65	1.92	0.80	* 2.39	0.24	0.76	0.32	-0.39	0.39	-1.00	† 2.50
Ambitious	-0.81	0.64	-1.26	-0.67	1.31	-0.51	1.41	0.75	† 1.88	1.29	0.51	* 2.54	* 2.98
Courageous	-0.48	0.69	-0.69	0.79	0.96	0.83	1.83	0.86	* 2.12	-0.63	0.56	-1.13	† 2.31
Obedient	-0.10	0.54	-0.19	-1.25	0.86	-1.46	-2.22	0.62	***-3.60	0.33	0.49	0.66	* 3.45

† = p<0.10. * = p<0.05. ** = p<0.01. *** = p<0.001.
N = 67 for female HR, 26 for female non-HR, 41 for male HR, 95 for male non-HR.

Table 6
Nonparametric Test of Median Differences across Gender and Function

		Median	Rank	Wilcoxon Z	Median Z
		Female	Male		
While entering	Self-respect	4	6	*-2.28	*-2.16
	Social recognition	11	9	*** 3.45	* 2.41
	Independent	6	8	*-2.00	**-2.58
	Loving	6	9	**-3.05	**-2.90
While leaving	A comfortable life	10	7	* 2.21	* 2.24
	An exciting life	9	6	** 2.92	** 3.00
	Happiness	3	6	***-4.16	**-3.23
	Inner harmony	6	8	**-2.94	**-2.95
	Social recognition	10	8	** 2.91	* 2.49
	Ambitious	10	5	*** 3.87	** 3.27
	Loving	7	10	***-3.71	**-2.83
	Polite	14	12	* 2.34	* 2.21

		HR	Non-HR		
While entering	Pleasure	15	14	* 2.23	* 2.54
	Clean	16.5	15	** 2.94	** 2.72
	Independent	6	8	**-3.02	**-2.93
While leaving	Mature love	8	10	*-2.24	**-2.84
	Loving	7.5	10	*-2.51	*-2.17

* = p<0.05. ** = p<0.01. *** = p<0.001.