FEMININE VALUES AND HAPPY LIFE-EXPECTANCY IN NATIONS

W. A. Arrindell , R. Veenhoven

Published in: Personality and Individual Differences, 2002, vol 33, pp. 803-813

Abstract
Cross-national studies suggest that people live happier in nations where feminine values prevail, in particular in nations that are also economically affluent. The first objective of the present study was to replicate this finding with a final quality of life index which is more comprehensive than the usual measure of subjective well-being. This comprehensive indicator termed 'Happy life expectancy' (HLE) combines subjective happiness with objective longevity. As predicted, HLE was higher in nations where feminine values were strongly endorsed, and more so in rich ($r = +0.51, n = 14, p < 0.05$) than in poor nations ($r = +0.27, n = 13$, NS). A second objective was to examine the mechanisms behind this relationship. Contrary to expectation, the findings could not be explained by national differences in private freedom.

1. INTRODUCTION

While it is possible to study the somatic and psychological health of *individuals* in relation to, for example, personality, demographic or socio-cultural variables, it is also feasible to examine average health in *countries*. At the latter level of analysis, one can gain an understanding of how social system characteristics may influence the health of populations at large. Studies of this kind fall within the so-called holocultural tradition (e.g., Rohner, 1986, p. 38) where cultures (nations or states within a nation) are treated as units and culture (national or regional) scores on the variables of interest are correlated with one another (e.g., Lynn & Martin, 1995; Matsumoto & Fletcher, 1996; Lester, 1996, 2000).

1.1 Culture

The ways in which people around the globe think, feel and act in response to the problems of life are heavily geared by shared notions, commonly referred to as 'culture'. Hofstede (1991, p. 5) defined culture as the collective programming of the mind which distinguishes the members of one group or category of people from another. The sources of these different mental programs lie within the social environments (family, school, workplace, living community, etc.) in which one grows up and acquires one's life experiences. These programs affect the functioning of societies, of groups within those societies, and of individual members of such groups (Inkeles & Levinson, 1969).

Correspondence to: Prof. Dr. Ruut Veenhoven Erasmus University Rotterdam, Faculty of Social Sciences, P.O.B. 1738 3000 DR Rotterdam, Netherlands. www.eur.nl/fsw/research/veenhoven

1.2. Feminine values

Masculinity/Femininity (MAS) represents one of the major dimensions that describe basic problems of humanity with which every society has to cope (see Hofstede, 1980, 1983, 1986, 1991, 1998, 2000, 2001). In Hofstede's view, masculine and feminine societies differ in the social roles that are associated with the biological fact of the existence of two sexes, and in particular in the social roles that are attributed to males. In Hofstede's formulation, "[masculine cultures] expect men to be assertive, ambitious and competitive, to strive for material success, and to respect whatever is big, strong, and fast. [Masculine cultures] expect women to serve and to care for the non-material quality of life, for children and for the weak. *Feminine* cultures, on the other hand, define relatively overlapping social roles for the sexes, in which, in particular, men need not be ambitious or competitive but may go for a different [goal in] life than material success; men may respect whatever is small, weak, and slow" (1986, p. 308). Thus, in masculine cultures (e.g., Japan, Austria, Venezuela) political/organizational values emphasize material success and assertiveness, whereas in feminine cultures (e.g., Sweden, Norway, The Netherlands) they accentuate other values (e.g., a welfare rather than a performance society), interpersonal relationships, and sympathy and concern for the weak.

Hofstede described feminine (vs masculine) countries as respectively characterised by the following societal norms:

- Sex roles in society should be fluid (vs sex roles in society should be clearly differentiated.)
- Differences in sex roles should not imply differences in power between the sexes (vs men should dominate in all settings.)
- Unisex and androgyny as ideal (vs *machismo*-ostentatious manliness- as model.)
- Both father and mother are used as models by boys and girls (vs father is used as model by boys, mother by girls.)
- Quality of life and of environment are important (vs performance and growth are crucial) (Hofstede, 1980, pp. 294-295).

In addition to these norms, Hofstede (1980, pp. 296-297) pointed to some consequences for society at large. For more feminine countries:

- Less occupational segregation (e.g., male nurses).
- Men and women can both be breadwinners and follow the same types of higher education.
- Belief in equality of the sexes.
- Stronger position of the mother in the family.

For more masculine countries:

- Some occupations are considered typically male, others essentially female.
- Men are breadwinners, women are cakewinners.
- Men and women follow different types of higher education.
- Belief in inequality of the sexes.
- Weaker position of the mother in the family.

1.3 Feminine values and subjective well-being

Hofstede himself did not predict an association between femininity and subjective well-being (SWB), an important component of positive mental health (Diener, 1994; Myers & Diener, 1995), which may be defined as the degree to which an individual judges the overall quality of her or his life as a whole in a favorable way (Veenhoven, 1984, p. 22). Yet, there are good reasons to expect a significant correlation. The feminine value pattern could contribute to SWB in various ways. On the other hand, a high level of SWB could also foster the development of feminine values. Both effects may occur at the individual and societal levels.

1.3.1 Effects of feminine values on SWB

One of the ways in which feminine values could raise SWB at the individual level is through their effects on stress. There is evidence that a feminine value orientation reduces job stress (i.e., less nervousness or tenseness at work) and fosters satisfaction with work (Hofstede, 1980, p. 288 and p. 299). Job stress and job dissatisfaction are important correlates of dissatisfaction with life (e.g., Diener, 1984; Near & Rechner, 1993). Yet, these correlations seem largely due to top-down effects (Headey, Veenhoven & Wearing, 1991).

A macro-level effect could be that mere existence of feminine values in a country creates greater opportunities for combining multiple social roles (employment, marriage, parenthood). The possibility of combining multiple roles is likely to make life more satisfying, in particular for women. There is empirical evidence which indicates that the occupation of multiple social roles is associated with good physical and mental health in both women and men (see Barnett & Baruch, 1987; Barnett & Rivers, 1996; Cleary, 1987). In addition, the feminine value pattern allows for a greater variety of gender identities. The Hofstede (1980, 1991, 2001) findings clearly suggest that in masculine countries, masculine traits are encouraged in males but discouraged in females, whereas feminine traits in males are discouraged and masculine ones encouraged. By contrast, in feminine societies, masculine traits are neither encouraged nor discouraged in either of the sexes, whereas feminine traits are encouraged in both males and females. Importantly, feminine traits have been found to correlate positively with measures of positive affect, whereas masculine traits have been shown to be negatively associated with mental distress (see Arrindell, Vergara, Torres, Caballo et al., 1997b).

Still another potential effect would be that support for feminine values in a country increases the likelihood that a welfare society emerges and that such a social system fosters the happiness of its citizens. Though plausible at first sight, this theory does not hold (Veenhoven, 1999; but see also Diener et al., 1995; Diener, 2000).

Thus, the proposition outlined above that feminine values in a country support the welfare state would seem to be a viable starting point.

1.3.2 Effects of well-being on feminine values

In addition to the effects of feminine values on well-being outlined in section 1.3.1, the level of well-being in a nation may also influence the endorsement of feminine values. At the micro-level, happiness has been found to facilitate various forms of pro-social behaviour, which in turn could increase the individuals' receptiveness for feminine values. For example, individuals in good mood are also more empathic, more perceptive and more active than their equivalents in less optimal mood. These conditions in subjects in optimal mood give rise to better performance in experiments related to helping behaviour and to greater participation in voluntary organizations. Happiness also seems to reduce aggressive and competitive tendencies (Veenhoven, 1986, 1989). At the macro-level, a climate of happiness will likely reduce anxiety and social conflict, and thereby also sustain the feminine values of modesty. In a similar vein, happiness has been linked with the development of democracy (Inglehart & Klingeman, 2000).

1.3.3 Contextual differences

Effects such as described in sections 1.3.1 and 1.3.2 are likely to vary across contexts. One potential contextual variable is the economic development of a nation. Arrindell, Hatzichristou, Wensink, Rosenberg, van Twillert, Stedema and Meijer (1997a) presumed that the effects of feminine values on SWB would be stronger in the most affluent nations, because the practical impact of a feminine mentality is more easily achieved if a country is wealthy than if it is poor (Hofstede, 1980, p. 295). Thus, Arrindell et al. (1997a) hypothesized that (a) the contribution of the MAS X national wealth interaction term would contribute significant variance in SWB scores, over and above (i.e. independent of) the contributions of its constituent components, and (b) a significant interaction between MAS and national wealth in predicting SWB scores would emerge and that the nature of this effect would entail that a combination of national wealth and a feminine mental programme would coincide with the highest national levels of SWB. Both hypotheses were confirmed (Arrindell, 1998).

1.4 Aims of the present study

The first aim of the present investigation was to test the stability of the findings described in section 1.3.3 using a somewhat different operationalization of well-being, namely one which not only takes into account how happy individuals are, but also how long they live. This is done by combining medical registration-based data on longevity with survey data on subjective appreciation of life (Veenhoven, 1996a, 1996b). The corresponding index is termed *Happy Life-Expectancy (HLE)* and can be interpreted as the number of years the average citizen in a country lives happily at a specific point in time (see 2.1).

A second aim was to explore the causal mechanisms behind the relationship between feminine values and happy life-expectancy. In doing so, the present study sought to examine the influence of freedom of choice. There are several reasons for focusing on this variable. One reason is that the feminine value pattern is likely to foster freedom of choice in society,

in particular freedom in the private domains of life. Typical of this creed is that choice should not be restricted by sex roles.

Freedom can be simply defined as "the possibility [of the individual] to choose" (Veenhoven, 2000, p. 259). This possibility requires (a) that there be an opportunity to choose (an attribute of the environment), and (b) a capability to choose (an *individual* attribute). Since the focus of the present study is on a cultural trait, the further discussion will be limited to opportunity to choose. In relation to opportunity to choose, Veenhoven (2000, p. 259) noted that it involves two requirements. Firstly, there should be choice options. In this sense, freedom depends on the societal supply of life style alternatives. As pointed out above, feminine societies are more likely than masculine ones to provide both males and females with opportunities to fulfill multiple social roles that are associated with good health. Secondly, the choice should not be blocked by others. Hofstede's work outlined above clearly indicates that such blockades are more easily accepted in countries with a masculine than in countries with a feminine value pattern. Thirdly, freedom was found to be a powerful correlate of happiness in nations. Veenhoven (2000) found sizeable correlations with economic freedom, political freedom and private freedom in nations. Fourthly, Veenhoven (2000) observed that the correlation between happiness and private freedom was stronger in rich nations than in poor ones. This observation tallies with the above mentioned finding that the association between feminine values and happiness is stronger in rich than in poor nations. These findings combined lead to the prediction that, in the richer countries, personal freedom to choose would mediate the relationship between feminine values and HLE, which means that this association would vanish following the statistical control for personal freedom to choose (as assessed at the national level). Section 2.2 describes how the latter variable has been measured.

2. METHOD

2.1 Measuring how long and happy people live in nations

Veenhoven (1996a) showed that average life-expectancy and average happiness in nations are relatively independent. Therefore it makes sense to combine these variables in an index. Happy life-expectancy (HLE) can be computed by multiplying life-expectancy -in years, with average happiness as expressed on a scale ranging from zero to one:

HLE=standard life expectancy x 0-1 happiness

For example, if life-expectancy for a specific country is 80 years and average happiness 8, happy life-expectancy is 64 years (80 x 0.8), a figure that characterizes the most liveable nations in the present day world (e.g., Iceland, the Netherlands, Sweden, Australia). The empirical (practical) range of the index is around 20-75 years. As to the interpretation of the index, Veenhoven (1996a) has pointed out that high HLE means that citizens live both long and happily. Low HLE implies that life of the average citizen is short and miserable. Medium values of HLE mean either of 3 things: (1) both moderate length of life and moderate appreciation of life, (2) long but unhappy life, or (3) short-lived but happy life. Metaphorically, the scores can be interpreted as the number of happy years that a nation affords to its citizens. The HLE index shows sensible relationships with other qualities of nations. Thus, high HLE has been found to be associated with national wealth, low incidence of corruption, self-perceived freedom at work, personal sexual freedom, infrequency of prejudice, medical safety and industrialization (energy consumption) (Veenhoven, 1996a, 1996b).

2.2 Measurement of private freedom

Current indicators of freedom in nations assess economic freedom (Gwartney, 1995) and political freedom (Karantnycky et al., 1995). These measures combine data from different domains and incorporate these into a summated score. In a similar vein, Veenhoven (2000, pp. 260-261) gathered data on restrictions in the private sphere of life. Veenhoven estimated restrictions in the following fields: in the practice of one's religion, in travel at home and abroad, in getting married or divorced, in sexuality and reproduction, and in ending one's own life. By summing across these domains, Veenhoven (2000, Appendix A) obtained an overall rating of private freedom for 44 nations in the early 1990s. Veenhoven (2000) also reported data to support the construct validity of this overall Personal freedom measure.

2.3 National data

Data on both average length of life and average appreciation of life were available for 48 nations in the early 1990s and were compiled by Veenhoven (1996a). The range in this nation set of the HLE scores was between 30 and 60 'happy years'. Data on MAS (M=50.16, SD=20.98, n=32), national wealth (M=10643.89, SD=6166.98, n=47), personal freedom to choose (M=-0.0384, SD=0.73,n=56), and HLE (M=47.78, SD=9.23, n=42) were compiled by Veenhoven et al. (1993) The overlap across the Veenhoven (1993, 1996a) data set and the Hofstede (1980) data base containing the figures on MAS involved 27 countries in Europe, North and South America, Africa and Asia (Scheme 1). It should be pointed out that even though the Hofstede data were not collected in the early 90s, but in the early 70s, Hoppe (1990) demonstrated with survey data collected in 19 countries more than a decade later, that the cross-national differences observed were quite similar to those that Hofstede had determined. Thus, Hoppe's results not only demonstrated the stability across time of the cross-national differences in the ways nations deal/cope with human problems (Hofstede, 1993, p. 9), but also that the different countries maintained their rank-orders on the dimensions of national cultures with the passage of time. Data supporting the construct and discriminant validity of the MAS dimension have been reported by Hofstede (1980, 1991, 2001).

Scheme 1 gives, in alphabetical order, an overview of the countries involved in the present study, with their scores on HLE, MAS, Personal freedom to choose and national Wealth (Purchasing power per capita in 1990, based on the United Nations Human Development Reports [1992]).

2.4 Statistical power analysis

Setting power at 0.80 and alpha=5% required sample sizes larger than the numbers involved in the different analyses to be presented below in order to detect findings of at least 'medium' effect size (Cohen, 1992). To counteract the problem of Type II error, a more lenient critical level for detecting a non-zero effect than the conventional 5% had to be stipulated, namely 10%.

3. RESULTS

3.1 Femininnity, national wealth and HLE

Hierarchical multiple regression analysis with interaction term (Cohen & Cohen, 1983) was carried out to address the topic of contribution of the national Wealth x MAS interaction term

to variance in national HLE scores independent of its constituent components. Its application entailed entering Purchasing power and MAS first (in this order), in a stepwise incremental fashion, as the two main effects, followed by the interaction of interest. In this kind of analysis, raw scores on the variables pertaining to the main effects have to be *centered* prior to multiplication. All correlations are of the Pearsonian type.

The zero-order r linking MAS with HLE was not significant, -0.23, n=27, p=0.13. National wealth correlated +0.78 ($p<0.001$) with HLE. The outcome of the hierarchical multiple regression analysis is summarized in Scheme 2 where it will be seen that R^2 increased significantly (with 6%) from step 1 (national Wealth) to step 2 (MAS), to 67%. R^2 also increased significantly (with 3%) from step 2 (MAS) to step 3 (Purchasing power X MAS), to 70% (multiple R=0.84, f^2=2.33 or very large effect size). In addition, as hypothesized, with standardized ß=-0.27 ($p<0.10$, one-tailed), the interaction term emerged as an independent predictor of scores on the HLE-index.

Looking at the particular nature of this significant interaction, it was observed that in the subset of poorer countries (i.e., the countries with Purchasing power scores below the national sample median of 15804; n=13), MAS did not correlate with HLE (r=-0.27, p=0.19 NS), whereas in the richer countries (i.e., Purchasing power scores equal to or above the median; n=14) MAS correlated *negatively* with HLE (r=-0.51, $p<0.05$, large effect size). When nations were categorised on the basis of their combined median scores on MAS (52) and Purchasing power (as above), the following mean HLE scores were yielded. For masculine and rich countries, 54.56 (SD=5.06, n=9); masculine and poor, 45.89 (SD=9.79, n=5); feminine and rich, 56.62 (SD=4.45, n=5); and feminine and poor, 46.93 (SD=8.72, n=8). Thus, as was foreseen, countries that were both feminine and rich had the relatively highest average levels of HLE.

3.2 Is personal freedom a mediator ?

In the larger data base (Veenhoven et al., 1993), Personal freedom of choice correlated significantly with the HLE-index (+0.59, n=42, $p<0.01$), but not with national Masculinity (-0.18, n=32, p=0.16). In the subset of the richer countries, however, a different pattern was obtained in that Personal freedom of choice did not correlate with HLE (0.25, n=14, p=0.20), whereas a significantly negative association was observed in relation to MAS (-0.62, n=14, $p<0.01$). On statistical grounds, both outcome strongly reduce the possibility for the Personal freedom of choice variable to emerge as a powerful mediator as it would need to correlate with both HLE and MAS (see Baron & Kenny, 1986). Indeed, when the influence of Personal freedom of choice was taken into account in the subset of the richer countries, Masculinity still correlated negatively with HLE (r=-0.47, df=11, $p<0.05$). Thus, in the richer countries, Personal freedom of choice did not mediate the relationship between MAS and HLE. In fact, when Personal freedom of choice was added as a predictor to a multiple regression analysis which also included MAS, Purchasing power (national wealth) and the Purchasing power X MAS interaction term, the latter 2 variables still emerged as independent predictors of HLE scores (for Purchasing power: standardized ß=0.90, t=4.93, $p<0.001$; for Purchasing power X MAS: standardized ß=-0.31, t=-1.59, $p<0.10$), whereas Personal freedom of choice clearly did not (ß=-0.09, $t<1$). When, in this analysis, the influences of the 3 variables of interest were held constant, the significant zero-order r=0.59 ($p<0.01$) between Personal freedom of choice and HLE dropped to a non-significant level (- 0.10).

4. Discussion

The first aim of the present study was to check whether the earlier observed relationship between feminine values and subjective well-being (Arrindell et al., 1997a) would hold using a more comprehensive and 'harder' indicator of well-being, namely happy life-expectancy. Pointing to the robustness of the relationship, higher happy life-expectancy was observed in stronger in the subset of rich nations than in the subset of the poor nations.

The second aim of the study was to examine the hypothesis that private freedom to choose would mediate the relationship between feminine values and happy life-expectancy. When the influence of private freedom to choose was held constant, feminine values still correlated significantly with happy life-expectancy in rich nations.

A further study containing a larger sample of nations which is representative of the world population at large in terms of national wealth is needed for addressing the replicability of the above outcome.

REFERENCES

Arrindell, W.A. (1998)
Femininity and subjective well-being.
In Hofstede, G. and associates (Eds.), Masculinity and Femininity. The Taboo Dimension of National Cultures. Thousand Oaks, CA: Sage.

Arrindell, W.A., Hatzichristou, C., Wensink, J., Rosenberg, E., van Twillert, B., Stedema, J. & Meijer, D. (1997a)
Dimensions of national culture as predictors of cross-national differences in subjective well-being.
Personality and Individual Differences, 23, 37-53.

Arrindell, W.A., Vergara, A.I., Torres, B., Caballo, V.E., Sanderman, R., Calvo, M.G., van der Ende, J., Oosterhof, L., Castro, J., Palenzuela, D.L., Zaldívar, F. & Simón, M.A. (1997b)
Gender roles in relation to assertiveness and Eysenckian personality dimensions: Replication with a Spanish population sample.
Sex Roles, 36, 79-92.

Barnett, R.C. & Baruch, G.K. (1987)
Social roles, gender, and psychological distress.
In Barnett, R.C., Biener, L. & Baruch, G.K. (Eds.), Gender and Stress. New York: The Free Press.

Barnett, R.C. & Rivers, C. (1996)
She Works/He Works: How Two-Income Families are Happier, Healthier, and Better Off.
San Francisco: HarperCollins.

Baron, R.M. & Kenny, D.A. (1986) *The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations.*
Journal of Personality and Social Psychology, 51, 1173-1182.

Cleary, P.D. (1987)
Gender differences in stress-related disorders.
In Barnett, R.C., Biener, L. & Baruch, G.K. (Eds.), Gender and Stress. New York: The Free Press.

Cohen, J. (1992)
A power primer.
Psychological Bulletin, 112, 155-159.

Cohen, J. & Cohen, P. (1983)
Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences, (Second edition).
Hillsdale, NJ: LEA.

Diener, E. (1984)
Subjective well-being.
Psychological Bulletin, 95, 542-575.

Diener, E. (1994)
Assessing subjective well-being: Progress and opportunities.
Social Indicators Research, 31, 103-157.

Diener, E. (2000)
Subjective well-being: The science of happiness and a proposal for a national index.
American Psychologist, 55, 34-43.

Diener, E., Diener, M. & Diener, C. (1995)
Factors predicting the subjective well-being of nations.
Journal of Personality and Social Psychology, 69, 851-864.

Gwartney, J.D. (1995)
Economic freedom in the world 1975-1995.
Vancouver, BC, Canada: Fraser Institute.

Headey, B., Veenhoven, R. & Wearing, A. (1991)
Top-down versus bottom-up theories of subjective wellbeing.
Social Indicators Research, 24, 81-100.

Hofstede, G. (1980)
Culture's Consequences: International Differences in Work-Related Values.
Beverly Hills, CA: Sage.

Hofstede, G. (1983)
Dimensions of national cultures in fifty countries and three regions.
In Deregowski, J.B., Dziurawiec, S. & Annis, R.C. (Eds.), Expiscations in Cross-Cultural Psychology. Lisse, The Netherlands: Swets & Zeitlinger.

Hofstede, G. (1986)
Cultural differences in teaching and learning.
International Journal of Intercultural Relations, 10, 301-320.

Hofstede, G. (1990/1991)
Empirical models of cultural differences.
In Bleichrodt, N. & Drenth, P.J.D. (Eds.), Contemporary issues in cross-cultural psychology. Amsterdam/Lisse, The Netherlands: Swets & Zeitlinger.

Hofstede, G. (1991)
Cultures and Organizations.
Software of the Mind. London: McGraw-Hill.

Hofstede, G. (1993)
Images of Europe. Valedictory Address delivered on the occasion of his retirement as a Professor of Organizational Anthropology and International Management. Maastricht, The Netherlands
Department of Economics and Business Administration of the University of Limburg.

Hofstede, G. (1998)
Masculinity/femininity as a dimension of culture.
In Hofstede, G. and associates (Eds.), Masculinity and Femininity. The Taboo Dimension of National Cultures. Thousand Oaks, CA: Sage.

Hofstede, G. (2000)
Masculine and feminine cultures.
In Kazdin A.E. (Ed.), Encyclopedia of Psychology. Washington, DC: American Psychological Association.

Hofstede, G. (2001)
Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations, (Second revised edition).
Thousand Oaks, CA: Sage.

Hoppe, M.H. (1990)
A comparative study of country elites: International differences in work-related values and learning and their implications for management training and development.
Ph.D. Dissertation, School of Education, University of North Carolina at Chapel Hill. (Cited in Hofstede, 1993).

Inglehart, R. & Klingemann, H.-D. (2000)
Genes, culture, democracy, and happiness.
In Diener, E. and Suh, E.M. (Eds.), Culture and Subjective Well-being. Cambridge, MA: The MIT Press.

Inkeles, A. & Levinson, D.J. (1954/1969)
National character: The study of modal personality and sociocultural systems.
In Lindzey, G. & Aronson, E. (Eds.), The Handbook of Social Psychology (2nd edition). Vol 4. Reading, MA: Addison-Wesley.

Karantnyky, A.C., Cavanaugh, C. & Finn, J. (Eds.) (1995)
Freedom in the world 1994-1995.
Annual survey of political rights and liberties. New York: Freedom House.

Lester, D. (1996)
Applying the concept of national character to states within a nation: An extension of Lynn's methodology.
Personality and Individual Differences, 21, 1055-1057.

Lester, D. (2000)
National differences in neuroticism and extraversion.
Personality and Individual Differences, 28, 35-39.

Lynn, R. & Martin, T. (1995)
National differences for thirty-seven nations in extraversion, neuroticism, psychoticism and economic, demographic and other correlates.
Personality and Individual Differences, 19, 403-406.

Matsumoto, D. & Fletcher, D. (1996)
Cross-national differences in disease rates as accounted for by meaningful psychological dimensions of cultural variability.
Journal of Gender, Culture, and Health, 1, 71-82.

Myers, D.G. & Diener, E. (1995)
Who is happy?
Psychological Science, 6, 10-19.

Near, J.P. & Rechner, P.L. (1993)
Cross-cultural variations in predictors of life satisfaction: An historical view of differences among West European countries.
Social Indicators Research, 29, 109-121.

Rohner, R.P. (1986)
The Warmth Dimension: Foundations of Parental Acceptance-Rejection Theory.
Beverly Hills, CA: Sage.

*United Nations Development Program (1992)
Global Dimensions of Human Development,
Human Development Reports. New York: Oxford University Press.

Veenhoven, R. (1984a)
Conditions of Happiness.
Dordrecht, The Netherlands: Kluwer Academic.

Veenhoven, R. (Ed.) (1989i)
How harmfull is happiness? Consequences of enjoying life or not.
Rotterdam: Universitaire Pers.

Veenhoven, R. (1996b)
Happy Life-Expectancy: A comprehensive measure of quality-of-life in nations.
Social Indicators Research, 39,1.58

Veenhoven, R. (1996h)
Leefbaarheid van Landen.
Research paper 96/02, Utrecht, The Netherlands: Vakgroep Algemene Sociale Wetenschappen, Rijksuniversiteit Utrecht.

Veenhoven, R. (2000b)
Wellbeing in the welfare state, level not higher, distribution not more equitable.
Journal of Comparative Policy Analysis, 2, 91-125.

Veenhoven, R. (2000a)
Freedom and happiness: A comparative study in forty-four nations in the early 1990s.
In Diener, E. and Suh, E.M. (Eds.), Culture and Subjective Well-being. Cambridge, MA: The MIT Press.

Veenhoven, R., Ehrhardt, J., Sie Dhian Ho, M. & de Vries, A. (1993b)
Happiness in Nations: Subjective Appreciation of Life in 56 Nations 1946-1992.
Rotterdam, The Netherlands: Erasmus University, RISBO.

Scheme 1

Measured scores on four variables in 27 nations

Nation	HL	Masculinity	Wealth	Personal freedom of choice
Argentina	50.07	5	4,295	-0.22
Austria	46.65	79	16,504	0.27
Belgium	56.45	54	16,381	0.50
Brazil	47.07	49	4,718	-0.31
Britain	54.78	66	15,804	0.53
Canada	57.19	52	19,232	0.58
Chile	50.94	28	5,099	-0.47
Denmark	59.91	16	16,781	0.76
Finland	56.19	26	16,446	1.12
France	49.39	43	17,405	0.78
India	35.03	56	1,072	-1.19
Italy	53.91	70	15,890	0.33
Ireland	57.56	68	10,589	-0.37
Japan	48.85	95	17,616	0.26
Mexico	50.43	69	5,918	0.24
The Netherland	58.82	14	15,695	1.37
Nigeria	30.35	46	1,215	-1.12
Norway	57.08	8	16,028	0.42
Portugal	50.40	31	8,770	0.03
South Africa	36.34	63	4,865	-0.75
South Korea	44.95	39	6,733	-0.69
Spain	52.94	42	11,723	0.23
Sweden	60.56	5	17,014	0.81
Switzerland	64.05	70	20,874	0.44
Turkey	39.97	45	4,652	-1.03
USA	56.66	62	21,449	0.20
West German	52.52	66	20,448	0.71

Scheme 2. Regressions (Hierarchical Multiple Regression Analysis with Interaction Term) of National Wealth (Purchasing Power per capita), Masculinity and National Wealth x Masculinity on National Levels of Happy Life-Expectancy (HLE)

		Statistics				
Step	Predictor	Multiple R	R^2	$F_{equation}$	ß	t(ß)
1	National Wealth (Purchasing Power)	.781	.611	39.20***	.83	7.01***
2	Masculinity (MAS)	.816	.666	23.92***	-.03	-0.20
3	National Wealth x MAS	.835	.697	17.67***	-.27	-1.55*

*p<0.10, *p<0.05, **p<0.01, ***p<0.001, (one-tailed tests for t-values; two-tailed tests for F-values). N = 27. The respective adjusted R^2-values are 0.595 (step 1), 0.638 (step 2), and 0.658 (step 3).