Does intelligence boost happiness? Smartness of all pays more than being smarter than others

Ruut Veenhoven

Erasmus University Rotterdam,
POB 1738, 3000DR Rotterdam, Netherlands
and
North-West University, South Africa
E-mail: Veenhoven@fsw.eur.nl

Yowon Choi*

Center for Happiness Studies,
Seoul National University,
Kwanakgu Kwanakro-1 220dong 643ho, South Korea
E-mail: yowonc@gmail.com
*Corresponding author

Abstract: We invest much in maximising intelligence and we get ever smarter: But does this make us any happier? The relation between intelligence and happiness is explored on two levels, at the micro-level of individuals and at the macro-level of nations. At the micro-level, we looked at the results of 23 studies and found no correlation between IQ and happiness. At the macro-level, we assessed the correlation between average IQ and average happiness in 143 nations and found a strong positive relationship. Together these findings mean that smartness of all pays more than being smarter than others.

Keywords: happiness; life-satisfaction; intelligence; cross-national; research synthesis; IQ.

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Biographical notes: Ruut Veenhoven studied Sociology and is an Emeritus Professor of Social Conditions for Human Happiness at Erasmus University Rotterdam, in The Netherlands and extra ordinary Professor at North-West University in South Africa. He is the Director of the World Database of Happiness and Founding Editor of the *Journal of Happiness Studies*. His research focuses on conditions for happiness and aims at more informed choice in both public and private matters. His recent publications are: *Wellbeing in Nations and Wellbeing of Nations* (2009) and *Greater Happiness for a Greater Number: Is that Possible? If So How?* (2011).

Yowon Choi is a Psychologist and a Senior Researcher at the Center for Happiness Studies of Seoul National University in South Korea. Her research focuses on psychological resources for happiness, happiness intervention, mindfulness and aims at long term improvement of individual's happiness. Her recent publications are: *The Happy Face of Mindfulness: Mindfulness*

Meditation is Associated with Perceptions of Happiness as Rated by Outside Observers (2012) and *Pathways to Happiness: Psychological Resources for Happiness* (2011).

1 Introduction

It is commonly assumed that smart people cope better with life and will therefore be happier, especially in a modern meritocratic society. This belief is one of the reasons why many parents force their children to spend more time on learning than they might like, with a hope that more education will make the child more intelligent and thus happier in later life. Are smarter people really happier? There are also notions such as unworldly wisdom, creating unhappy eggheads (Lecklider, 2010). And the years spent in school may be less happy than years spent in real life.

It is generally believed that an intelligent populace will be lead to a better society and hence to a higher level of public happiness. This is one of the reasons why many politicians plea for more education than is already standard in modern societies. There are also counter notions, such as the idea that society has become too rational and that non-cognitive potential is underdeveloped in modern education.

These ideas are discussed in more detail in this paper, taking into account the available data on the relationship between intelligence and happiness.

1.1 Views on the relationship between intelligence and happiness

The belief that intelligence links to happiness has several roots. One is that both are manifestations of a healthy mind. Another view is that intelligence and happiness are conceptually different but causally related, intelligence being instrumental to happiness and, possibly, that happiness facilitates intellectual development. In the skeptical view, intelligence and happiness are also conceptually different and causal relations may be non-existent or negative. These views are dealt with in more detail below.

1.1.1 Intelligence and happiness as manifestations of a healthy mind

Intelligence is often recognised as ‘wisdom’, especially in the areas of philosophy and religion. In this view, wisdom is overlapped by happiness, at least by happiness in the sense of ‘eudaimonia’, which Aristotle associated with intellectual activity (Schwartz and Sharpe, 2006). In the same vein, intelligence and happiness figure jointly in notions of positive mental health, e.g., in the discussion of ‘ego resilience’ by Block and Kremen (1996).

1.1.2 Intelligence generates happiness

The view that intelligence is conductive to happiness has been proclaimed by many scholars. For instance, Helen Adam Keller (1880–1968) wrote, “Knowledge is happiness, because to have knowledge – broad deep knowledge – is to know true ends from false and lofty things from low”…. “To know the thoughts and deeds that have marked man’s progress is to feel the great heart beats of humanity through the centuries; and if one does

not feel in these pulsations a heavenward striving, one must indeed be deaf to the harmonies of life" (Keller, 2003). In this view, intelligence means knowledge that is acquired through education.

Studies into the long-term effects of intelligence also suggest that it has positive effects on happiness. High scores in intelligence tests at school age are predictive of later achievements in education and occupation (e.g., Rutter, 1989), and a long-term follow-up of US children who scored higher than 135 on an IQ test has shown that these master minds maintained also better health (Terman and Oden, 1959). A recent meta-analysis of follow-up studies has confirmed that IQ is a powerful predictor of socio-economic success, but that it has little more power than parental social economic status or school grades to do this (Strenze, 2007).

1.1.3 Intelligence affects happiness at best marginally

Critics of IQ-testing argue that IQ tests were developed to predict success in school and predict little more than that, certainly not happiness. Several findings support this view: e.g., IQ appears to be unrelated to adjustment to military life (Zigler and Seitz, 1982) and the mental abilities necessary for succeeding as a manager appear to be very different from the skills assessed in IQ tests (Klemp and McClelland, 1986). Likewise, the relation between IQ and performance at work appears to reduce over the years and it has been found that experienced low-IQ workers can outperform co-workers with higher IQ scores after 4.5 years (Kamin, 1995).

Another criticism levelled at IQ testing is that there is no such thing as 'general intelligence', and that one might better think of 'multiple intelligences' that relate in different ways to performance on different tasks (Gardner, 1984). The idea of 'emotional intelligence' (EI) has been put forward to support the criticism that IQ is limited to the cognitive process of human mental power (Salovey and Mayer, 1990).

In this school of thought, happiness is more likely to depend on situational relevant abilities than on a standard set of school-related abilities.

1.1.4 Intelligence brings happiness down

There is also the opposing view that intelligence can decrease happiness. Some of the reasoning behind this view is that understanding can hurt, in particular because it brings life's imperfections to ones awareness. A common stereotype holds that gifted people are apt to have tragic lives. This view is reflected in popular sayings, such as "From ignorance our comfort flows, only the wretched are the wise"[1], "In much wisdom is much vexation", and "Where ignorance is bliss", "This folly to be wise"[2].

Another line of reasoning concerns 'school-intelligence' in particular and holds that the cultivation of this type of intelligence comes at the cost of other capabilities that are more required to lead a happy life. Illich (1971) is a proponent of this view and advocates the 'de-schooling' of society.

1.1.5 Happiness breeds intelligence

There is a growing body of literature on the consequences of happiness (Lyubomirsky et al., 2005) and some of this literature suggests that happiness has a positive effect on cognitive development. For example, people who have been induced to feel happy

perform better at complex mental task (Isen and Means, 1983), people in a positive mood are more likely to have richer associations within existing knowledge structures and to use more frequent heuristics, and are more likely to be flexible and creative (Isen, 2000). Fredrickson's (2001) 'broaden and build theory' suggests that the experiencing of positive emotions expands people's momentary thought-action repertoires and builds up personal resources, including intellectual resources.

The opposite view is that happiness may thwart intellectual development. In this context, a common argument is that happiness makes people lazy and uncritical, and therefore less apt to train their brain. This view fits with the idea of 'depressive realism'; mildly depressed people are more accurate in their perceptions of how others see them than those who are not depressed (Alloy and Abramson, 1979). It also matches the finding that performance of some tasks tends to be lower in induced positive affect states, among which is the task of solving logical problems (Melton, 1995).

1.2 Plan of this paper

Which of these views fits reality best? Below we report on two studies that give some answers to this question. Study 1 was a synthesis of the available research findings at the micro level. We considered the results of 23 studies on the relationship between IQ and the happiness of individuals. Study 2 was a new study at the macro level in which average IQ and happiness were compared across nations. We analysed data from 139 contemporary nations. Two preliminary steps were to define the concepts of intelligence and happiness and then to select of appropriate measures of these.

2 Concepts and measures

The terms 'intelligence' and 'happiness' are used in different ways in different fields. Hence our first step was to define how we will use these terms.

2.1 Intelligence

A common definition of intelligence is "the ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought" (Neisser et al., 1996). This broad definition covers several more specific notions of intelligence that link with different methods of measurement.

2.1.1 School intelligence

Mostly, the word intelligence is used to denote a set of school-related mental capabilities that can be measured using an IQ test. These tests were initially developed as a means to predict school success (Binet and Simon, 1916) and hence they are designed largely to measure the same capabilities as actual school performance, such as quantified in GPA scores. There is a massive research literature on this kind of intelligence (Sternberg, 2000a).

2.1.2 Other mental abilities

The term intelligence is also used to denote mental capabilities that are less central to school education, such as the ability to find new solutions (creativity) and the ability to read other people's feelings (empathy). These matters are not easily 'tested' using performance on tasks and therefore several investigators have resorted to using self-estimates (Bar-On, 1997). This technique is dubious however (Derksen et al., 2002) and certainly not suited to assess the relationship of intelligence with happiness, since happy people typically have higher self-esteem and are thus likely to be more positive about their skills. Although there is considerable research on the relationships between these types of intelligence with happiness, we will not consider this in this paper.[3]

2.1.3 Wisdom

Intelligence is sometimes denoted as 'wisdom' and in this case the term is used to cover a broad range of mental proficiencies and attitudes, among which are a distanced view on life and moral maturity. There have been some attempts to approach wisdom systematically as a psychological variable (Baltes and Staudinger, 2000; Sternberg, 2000b), and even to measure this, using lengthy self report inventories (Hawley, 1999; Ardelt, 2003). Scores on such self reports are related to self reported happiness (Bergsma and Ardelt, 2011), but the correlation could be the spurious result of a positive view on oneself. There are also attempts to assess wisdom using objective assessment of core capabilities, such as clinical ratings of insight in oneself, accurate use of personal information in making choices and systemising goals plans and life stories (Mayer, 2009). Yet the meaning of the subject matter covered is not too clear and data are scarce.

Given these constraints, we will define intelligence in the narrow sense as school intelligence, and use IQ-tests and school grades as indicators of intelligence. The issue is thus reduced to the question of whether further cultivation of school-related abilities will make us happier.

2.2 Happiness

Happiness is defined as the 'subjective enjoyment of one's life-as-a-whole' and is also called 'life-satisfaction'. This concept is delineated in more detail in Veenhoven (1984, pp.22–37; 2010a). Happiness in this sense concerns one's subjective appraisal of life and does not overlap with intelligence when seen as objective mental capability.

Since happiness is something we are aware of, it can be measured using self-report. Various questions and questionnaires have been used for this purpose, but not all of these address the matter equally well. Some questions concern subtly different things, such as whether one thinks one-self to be happier than average, and most multi-item inventories reduce the evaluation of life-as-a-whole to the sum of one's satisfaction with a set of specific life-domains. Still, there are many acceptable measures and these are listed in the collection 'measures of happiness' that is part of the World Database of Happiness (Veenhoven, 2010a).

3 Study 1: synthesis of studies at the individual level

Studies on the relationship between intelligence and happiness at the level of the individual were selected from the Bibliography of Happiness (Veenhoven, 2010b), subject section 'cognitive abilities' (code Ic04.02). We found 23 empirical studies. These studies were done in ten different nations and involved 15,827 respondents. We extracted 61 findings from the reports. The findings on earlier intelligence and current happiness are reported in Appendix A. The findings on current intelligence and current happiness are reported in Appendix B. The findings were too diverse to make a quantitative meta-analysis. We will thus present a narrative account of the findings below.

3.1 Earlier intelligence and present happiness

In six follow-up studies among normal people the relationship between initial intelligence and later happiness was assessed. Four of these studies found no greater happiness among initially smarter people. One of the studies shows the reverse, managers who scored high on IQ tests when entering a company in their twenties, appeared to be less happy in their forties than colleagues who had scored lower. Another study found a positive effect of earlier verbal ability on happiness, but no effect for earlier mathematical ability (Appendix A1).

A long-term follow-up of a cohort of exceptionally intelligent schoolchildren also does not show a positive effect for intelligence on happiness, forty years on the 'very gifted (IQ > 180) appeared to be no happier than the 'just' gifted (IQ > 140). See Appendix A2.

3.2 Current intelligence and current happiness

In 19 of the studies researchers had assessed the relationship between current intelligence and current happiness. In eight of these studies overall IQ scores were used. No positive relationships were found between IQ and happiness and in one case a negative correlation appeared, again in the study among managers (Appendix B1).

In ten of the studies specific intellectual abilities were considered and few significant correlations were found. The scores of subjects tested on perceptual and mathematical ability appeared to be unrelated to happiness. At best there are indications that performance in memory tasks and idea generation is related to happiness. In one of these studies the researchers controlled for other predictors of happiness and this reduced the correlation to insignificance (Appendix B2).

No correlation was found in six studies where researchers considered the relationship of a subject's current verbal ability and happiness (Appendix B3).

Finally, in three studies the subjects were individuals with intellectual disabilities. The degree of disability appeared to be unrelated to happiness, but those with an intellectual disability appeared to be happier than normal people (Appendix B4).

These findings fit an earlier meta-analysis by DeNeve and Cooper (1998) who found almost no correlation between intelligence and happiness in a series of 19 studies, most of which were also used in the present analysis.

3.3 Self-perceived intelligence and happiness

Although little correlation has been found between *actual* intelligence and happiness, several studies have found strong correlations between *self-perceived* intelligence and happiness. These data are not shown here, but can be found on the collection of 'correlational findings' of the World Database of Happiness (Veenhoven, 2010c), subject section 'Happiness and self perceived intelligence' (code I3.2.3). This finding fits our reservations about self-report measures of wisdom and emotional intelligence.

Table 1 Summary of findings

Kind of intelligence			*Correlation with happiness*
Actual intelligence	Earlier	IQ of normal persons	+/0/–
		Very high IQ (vs. high)	0
	Current	General IQ	0
		Specific abilities	0
		Normal (vs. disabled)	–
Self-perceived intelligence			++

4 Study 2: average IQ and happiness in nations

Study 1 showed that school-smart individuals are not happier. Still it could be that in smart populaces the group profits from abilities that are not profitable for individual members. We investigated this with in an analysis of average intelligence and happiness in 139 nations.

4.1 Data

Findings on IQ scores in nations were gathered by Lynn and VanHanen (2002, 2006), who found comparable data for 192 nations for the second half of the 20th century. Most of these data resulted from the application of a Raven progressive matrices test to representative samples. The data were adjusted for the Flynn effect so that scores obtained in different periods could be combined.

Data on average happiness in these nations were taken from the World Database of Happiness; collection 'Happiness in Nations' (Veenhoven, 2010d). These data are based on surveys in the general population in various nations over the years 2000 to 2009 and cover 150 nations. In most of these countries happiness was measured using the following question: *All things considered, how satisfied or dissatisfied are you with your life as-a-whole these days?* Responses were rated on a numerical scale ranging from 0 (not satisfied) to 10 (very satisfied). Rating ranged from 1 to 10 in some of the surveys and these scores were stretched linearly. Details are reported in Veenhoven (2010d).

The IQ and the happiness variables are available for 143 nations[4], which covers about 95% of the world's population. The large number of nations for both variables was crucial. Earlier analyses using smaller numbers of nations have yielded different results (Choi and Veenhoven, 2005; Lynn, 2008).

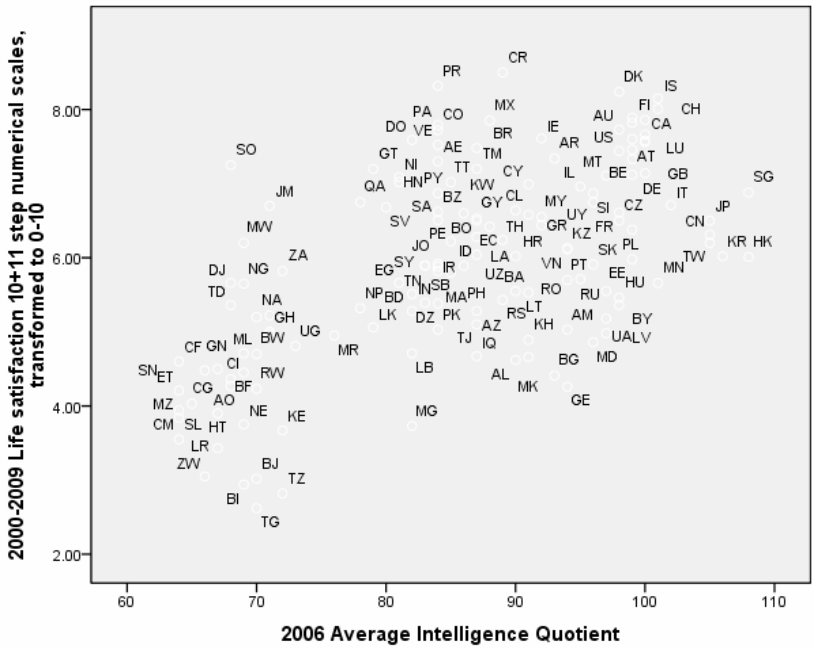
Table 2 Data on IQ and happiness in 143 nations

	Actual range	*M*	*SD*
IQ	59–108	84.7	11.8
Happiness	3.2–8.5	5.9	1.3

4.2 Results

There is a strong correlation between IQ and happiness in nations: r = +.60[5]. This relation is depicted graphically in Figure 1.

Figure 1 Average IQ and average happiness in 143 nations



The correlation is largely driven by the cluster of nations that pair low IQ with low happiness at the bottom left of the scattergram. These are mainly African nations, where data was not available for earlier studies on this matter, e.g., Zimbabwe (ZW) and Mozambique (MZ). The pattern is less clear in the bigger cluster at top-right, where the average IQ is higher than 80. This is why earlier studies found no relationship between IQ and happiness (Choi and Veenhoven, 2005; Lynn, 2008). In this context the position of the industrialised Asian nations is noteworthy. China (CN), Hong Kong (HK), South Korea (KR), Japan (JP) and Singapore (SG) score highest on IQ, but not on happiness.

At first sight this would suggest that there is a pattern of diminishing returns, i.e., smart countries do not become much happier as they get even smarter. Yet particular circumstances may depress the correlation in this cluster as we will argue in the discussion section.

4.2.1 Control for economic development

Typically, IQ is higher in the more developed nations and the higher happiness in these nations may be due to related matters such as economic prosperity, political democracy and personal freedom. We checked for this possibility by controlling for buying power per head, which is a good proxy for societal development[6]. The correlation is halved: the partial correlation being +.35.

To get a closer view we also ran separate analyses for subsets of poor nations, with a buying power per head lower than $8,000, and rich nations where buying power is more than this. Among the poor nations we found a positive correlation, r = +.52. Among rich nations a lower correlation emerged: r = +.17[7].

4.2.2 Split-up by culture

The correlation found between IQ and happiness in nations could also be the spurious result of cultural differences, for instance because Western cultures value intellectual development and also happen to nurture happiness. We checked for this in a separate analysis of six subsets of nations: African nations, Asian nations, Middle East nations, ex-communist East-European nations, Latin America and Western nations. We found high positive correlations in the following regions: Asia, Latin America, Middle East and western nations. No correlation appeared among African nations and former communist East European nations. See Table 3.

Table 3 Correlation between average IQ and happiness in different sets of nations

Set of nations	*r*	*N*
All nations	+.60	143
Rich nations > 8,000	+.17	65
Poor nations < 8,000	+.52	75
African nations	+.06	35
Asian nations	+.62	20
East-European nations	+.02	25
Middle-East nations	+.20	15
Latin American nations	+.47	24
Western nations	+.43	23

This latter test of the correlation in different cultures suggests that there is a robust statistical relationship between average IQ and happiness in nations, which tends to be disguised when all cultures are put in one hat. This is another reason why our result differs from the earlier analysis by Lynn (2008).

5 Discussion

No correlation between IQ and happiness was found at the individual level (Study 1) but a strong correlation between the two was found at the nation level (Study 2). How can that be? Let us first consider these findings separately and then the contradiction.

5.1 Why are smarter people not happier?

In Study 1, we found no correlation between IQ and happiness, neither for childhood IQ and present day happiness, nor for current IQ and current happiness. The following explanations come to mind.

5.1.1 Trivial?

One explanation could be that intelligence is too trivial to affect happiness. In this approach one can argue that IQ tests measure a rather narrow range of cognitive abilities that predict success in school better than success in life. Yet there is good evidence that IQ predicts more than performance in school, it also predicts success at work and a high IQ is even predictive of health and longevity (Terman and Oden, 1959; Rutter, 1989; Herrnstein and Murray, 1994; Hartog and Oosterbeek, 1998; Singh-Manoux et al., 2005; Strenze, 2007). In this light, a more probable explanation would seem to be that the evident rewards of intelligence are counterbalanced in some way. The question is then: In what ways?

5.1.2 Negative concomitants of IQ

One offset could be in expectations. School-smart people could expect more of life and therefore end up equally happy as the less smart, who expect less. A related drawback could be that gifted people must live up to the high expectations of their kin (Holahan et al., 1999).

This explanation is also used to account for the low correlation between education and happiness (Diener and Biswas-Diener, 2002; Hartog and Oosterbeek, 1998). However, one could as well assume that the expectations of intelligent people are more realistic, which should give rise to greater happiness. At a more basic level, the cognitive theory behind this explanation can be criticised. Happiness is mostly not 'calculated' from the difference between ideal and reality, but is rather 'inferred' from affective experience, which in its turn reflects the gratification of basic needs (Veenhoven, 2009).

Another explanation holds that knowledge hurts, because it confronts us with the imperfections of this world and our-self. In this view, ignorance is bliss. Yet this account does not fit the fact that happy people are typically well-informed and open to acquiring more information (Isen, 2002).

A more plausible explanation would seem to be that the cultivation of school-intelligence involves costs. These costs can be in hours spent in school, not spent on sports or socialising and thus in underdevelopment of other capabilities required to lead a satisfying life. In this light, Diener and Seligman (2002) warn against sacrificing the time required to develop satisfying relationships with friends and family. The unhappy 'nerd' who is good with books but clumsy in social life may be exemplary of a wider phenomenon. A related explanation is that smart pupils have to live up to high expectations (Holahan et al., 1999). These explanations link up with criticism of school systems that focus too much on test performance, such as the competitive school systems of Japan and South Korea, where children are often required to take extra out of hours classes to succeed.

In the same vein, there could be costs involved in intellectual work, such as overburdening the brain and lack of physical effort. Though symbol-manipulation is a

specialty of the human species, the human repertoire is broader. There may also be attendant costs such as working in an alienating bureaucracy. To our knowledge this matter has not been investigated to any extent, possibly because investigators tend to value brainwork too highly.

5.1.3 Selectiveness

Another explanation could be that unhappy people are more apt to cultivate their brains and that this selection veils an otherwise positive effect of intelligence on happiness. A check of this explanation would require follow-up of a cohort from childhood on. The follow-ups reviewed in Study 1 cannot answer this question, since happiness was not assessed at baseline. To our knowledge there are no studies that meet this requirement.

In conclusion: we have a clear outcome, but no definite way to account for it; and what we are left with is a relevant issue for further research.

5.2 Why still greater happiness in smarter nations?

In Study 2, we found a strong correlation between average IQ and average happiness in nations. Study 1 showed that this cannot be due to the greater happiness of smarter individuals. What else can explain this result?

5.2.1 Spurious correlation?

One possible explanation is that average IQ and average happiness depend on the same social conditions. One such condition can be the availability of adequate nutrition and health care, since both intelligence and happiness benefit from a healthy body, in particular from healthy pre- and post-natal conditions. Likewise, the modernising of society can boost both intelligence and happiness. Societal modernisation enhances intelligence for several reasons, one of which is that use of technology sets high demands on symbol manipulation. Modernisation of society can also enhanced happiness (Veenhoven and Berg, submitted), one of the reasons being that it involves individuals having more choice. Together these developments can create a positive correlation, while intelligence does not add to happiness or may even detract from it.

Much of this common variance should be removed when the degree of modernity is partialled out. We did that check in Section 4.2. The correlation was halved, but remained substantial: partial r being +.35. Splitting the poor and rich nations also did not wipe out the correlation. So this cannot be the whole story. What is more, modernity can also be a causal link between average intelligence and happiness in nations, as we will see below.

Should more nation characteristics be controlled, as a reviewer suggested?[8] Controls make sense only if there are good reasons to expect that a variable distorts the picture and we do not see plausible candidates. It is easier to think of variables that mediate the relation between average intelligence and happiness in nations.

5.2.2 Possible causal effects

For society to function its members require various abilities and these abilities differ as to society evolves: e.g., physical skill will be, generally, more important in a hunter-gatherer society than in a present day industrial society. The abstract mental abilities that we call

'intelligence' are particularly essential for the functioning of modern society, which is characterised by a fine grained division of labour and continuous technological development. It is for this reason that all modern societies have developed extensive education systems (Nolan and Lenski, 2009).

As noted above, a modern society breeds more happiness than a pre-modern society does; in the most modern nations of this time we now live longer and happier than ever before in human history. Various causal mechanisms are involved, such as a stable social environment that allows much individual autonomy, produces less violent conflict, provides for more material comfort, offers better health care, all set in a competitive economy that keeps us going (Veenhoven, 2006, 2010e). Seen in this context, a high level of intelligence is instrumental for this type of society that in its turn is instrumental to happiness. In this way the average intelligence of the population in a country can give rise to greater happiness indirectly, with its effect being mediated by societal conditions.

This explanation predicts that the correlation will largely disappear when societal development is controlled. This appears to be the case indeed. As noted above, the correlation is reduces to +.35 when income per head is partialled out. In this line one can also expect that average intelligence in a country is also instrumental to the proper functioning of institutions in his complex type of society. Additional control for government effectiveness[9] and rule of law[10] reduces indeed the correlation to +.27.

Since societal development does not explain all the common variance of average intelligence and happiness in nations, there are apparently more causal effects involved. One of these could be the reduction of conflict, intelligent populations being less apt to stereotyping and more inclined to peaceful conflict resolution. If so, that should materialise in less violent conflict, greater trust and more tolerance. Additional control for these variables should therefore reduce the correlation even further. This implication cannot be checked as yet, because we lack data on that matter for the African nations where intelligence is lowest.

5.3 Why no stronger correlation among developed nations?

If intelligence is more functional in developed society, one would expect that the correlation between average IQ and happiness is stronger among the most developed nations than among the least developed nations. Table 3 provides mixed support for this prediction. The correlation between average IQ and average happiness is indeed lowest among the least developed African nations. Yet among all the poor nations together, the correlation is higher than among the rich nations.

Possibly, this is a historical coincidence. All the nations at the right part of the scheme are developed nations with strong schooling systems that produce an intelligent populace. Yet in some of these countries the level of happiness is lower than characteristic for developed nations. In the East-European nations, happiness is temporarily depressed by the legacy of communism and the rapid transformation since 1990. Happiness is picking up in these countries (Baltatescu, 2006), but that does not yet reflect the scores used here, which draw on surveys between 2000 and 2009. Average happiness is also relatively low in Asian 'Tiger' nations and this pattern may also be due to social transitions, among which the change from traditional collectivism to modern individualism (Stam and Veenhoven, 2007). If so, the correlation between average IQ and happiness will get stronger in this part of the world in the years coming.

6 Conclusions

Smart people are not happier than their less smart fellow citizens, but average smartness of compatriots goes together with average happiness in nations. This suggests that intelligence adds to happiness only indirectly though its effects on society. Educators should acknowledge this counter intuitive finding.

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Notes

1 Prior, 17C.

2 Gray (1981).

3 That research is summarised in the World Database of Happiness, collection 'Correlational Findings' (Veenhoven, 2010c). Look under: creativity (subject code C10).

4 These data on average IQ and average happiness in nations are available in the data file 'States of Nations' (Veenhoven, 2010e), which contains much more data on nation characteristics, among which data on income per head. This data file is available on request. The variable codes are respectively IQ_2006 and HappinessLS10.11_2000s.

5 Unlike most cross-national studies we do not report significance of correlations. Significance-statistics provide information about the likelihood that the correlation observed in a sample exists in the wider population and assumes probability sampling. Since this set of nations does not represent a representative sample of all nations of the world, such statistics make no sense here.

6 In this set of 140 nations buying power per head is highly correlated with other manifestations of modernity, such as share of the service sector ($r = +.53$), urbanisation ($r = +.64$), women emancipation ($r = +.76$) and globalisation ($r = +.78$).

7 Different cut-off points between rich and poor produce similar results.

8 A reviewer suggests that we control the level of education in a country, using literacy as an indicator. Control for enrolment in education reduces the indeed the correlation between

average intelligence and happiness in nations, but does not demonstrate a spurious effects, Schooling and intelligence are two sides of the same coin and hence controlling one wipes out the other.

9 Variables in data file States of Nations: GovDemocraticQuality_2006 and GGovEffectiveness_2066.

10 Variable in data file states of nations: RuleLaw_2006.

11 References marked with an asterisk indicate studies included in the data analysis.

Appendix A1

Earlier intelligence and current happiness among normal people

Subjects	*N*	*Test of intelligence*	*Measure of happiness*	*Observed relationship*	*Study*
Male college students, USA, followed three years	17	Scholastic aptitude test (SAT)	Average self report of daily mood over three weeks of experience sampling)	r = +.12, ns	Wessman and Ricks (1966)
		Mathematical aptitude test (MAT)		r = +.17, ns	
High school boys, USA, followed three years from tenth grade	1,628	Quick test of intelligence	Self-report of being a 'happy person' on six questions	r = ns	Bachman et al. (1970)
Male high ranking employees of a telephone company, USA, followed from their late 20th to their late '40s	422	Rating by four experts	Expert rating of 'pleasure in life', based on regular assessments	r = –.34, p < .01	Bray and Howard (1980)
		Multiple-choice intellectual test with verbal and quantitative scales		r = –.26, p < .05	
Dutch individuals born in 1940, IQ test at age 12, happiness measured at age 53	1,893	Mathematical ability	Self report of life satisfaction on single question	ns*	Hartog and Oosterbeek (1998)
		Verbal ability		+ p < .05	
Scottish individuals born in 1921, IQ test at age 11, happiness measured at age 79	550	Moray house test number 12	Self report of satisfaction with life scale on five items (Diener's)	r = .00, ns	Gow et al. (2005)
Canadian WWII veterans	326	Army intelligence test administered 1941–1945	Memorial University of Newfoundland Scale of Happiness (MUNSH) administered 1984–1986	r = +.14, ns	Arbucle et al. (1992)

Note: *Association expressed in ordered probits, which do not allow interpretation of absolute effect size.

Appendix A2

Earlier IQ and current happiness among gifted persons

Subjects	*N*	*Test of intelligence*	*Measure of happiness*	*Observed relationship*	*Study*
Elementary school pupils scoring < 140 on IQ test, USA, 1922 followed until 1992	430	Combined quotient on Stanford achievement test at age 12 (in 1922)	Self-report on single question: on achievement of life goal, 'joy in living' in 1960	Chi^2 = ns*	Sears and Barbee (1977)
Sub-sample of males	34	Just gifted (IQ > 140) vs. very gifted (IQ > 180)	Success in reaching goals in life in 1960. Rated importance of goals multiplied by reported success in attaining that goals	Very gifted happier (74%) than gifted (68%)	Feldman (1984)
Sub-sample of females	18			Very gifted less happy (57%) than gifted (64%)	

Notes: Studies based on Terman's follow-up study of people who scored high on the Standfort-Binet test at age 12 (T1) 'gifted': IQ > 140, 'very gifted': IQ > 180.
*Chi value not reported.

Appendix B1

Current IQ and happiness – general IQ test

Subjects	*N*	*Test of intelligence*	*Measure of happiness*	*Observed relationship*	*Study*
Graduate students in education, USA	388	Otis S-A test of mental ability	Self report of common mood	Males: r = –.03 Females: r = –.09	Watson (1930)
Female college students, USA	238	Ohio University psychological examination (below vs. above the 75 percentile)	Self-report of happiness and contentment on multi questions	D% = +, s	Washburne (1941)
High school boys of tenth grade, USA	1,628	Quick test of Intelligence	Self-report of being a ‘happy person’ on six questions	r = ns	Bachman et al. (1970)
Institutionalised retarded males, USA	149	Data from hospital records	Staff rating of cheerfulness	Open ward: r = +.04, ns Closed ward: r = –.16, ns	Pandey (1971)
46+ aged, USA	502	Wechsler Adult Intelligence scale	Self report of overall happiness on Cantril ladder	r = +.05	Palmore and Luikart (1972)
40+ aged male managers, USA	422	Rating by four experts Multiple-choice intellectual test with verbal and quantitative scales	Expert rating of ‘pleasure in life’ based on regular assessments	r = –.30, p < .01 r = –.25, p < .05	Bray and Howard (1980)
18+ aged, USA	2,650	Shortened Thorndike intelligence test (verbal)	Self report of happiness on single question	r = +.06, p < .01 beta = –.01, ns controlling: age, gender, race, education, family income, marital status, church attendance, political participation and health	Sigelman (1981)
Army recruits, Norway	269	Norwegian armed forced test battery with mathematical, verbal, and spatial section	Self-report on one question of happiness, three-point happiness Self-report on one question of general life satisfaction, seven-point happiness	r = –.06, ns r = –.07, ns	Watten et al. (1995)
18–33 aged, USA	95	Revised Wechsler adult intelligence scale (WAIS-R)	Rating of ‘cheerfulness’ by six judges on the basis of clinical interviews	r = +.04, ns (men) r = –.08, ns (women)	Block and Kremen (1996)

Appendix B2

Current IQ and happiness – special ability tests

Subjects	*N*	*Test of intelligence*	*Measure of happiness*	*Observed relationship*	*Study*
Female college students, USA	72	Time necessary to number backwards from 100 to 1	Self-report of average mood on single question	r = +.02, ns	Ludwig (1971)
Adults, Germany	1,894	Open question about ideas they associate with a certain city, profession or political concept	Rating by interviewer of cheerful appearance	Cheerful looking Ss produce more associations in the interview	Noelle-Neumann (1980)
College students, USA	67	Hidden figure test: 16 item multiple-choice tests asking which one of five simple figures was embedded in a given complex figure.	Self-report of mood of the day on single question, answered every evening during six weeks	r = +.14, ns	Gorman (1971)
			Self-report of overall happiness on Cantril ladder	r = +.09, ns	
		Hidden pattern test: asking to check the instances in which 200 complex figures contains a given simple figure	Self-report of mood of the day on single question, answered every evening during six weeks	r = +.23, ns	
			Self-report of overall happiness on Cantril ladder	r = +.24, p < .05	
		Barron-Welsh art scale of perceptual rigidity: 20 pairs questions to choose more elaborate figure	Self-report of mood of the day on single question, answered every evening during six weeks	r = +.16, ns	
			Self-report of overall happiness on Cantril ladder	r = –.15, ns	
		Breskin 15 item rigidity test: to choose 'good fit' figure	Self-report of mood of the day on single question, answered every evening during six weeks	r = –45, p < .01	
			Self-report of overall happiness on Cantril ladder	r = –15, ns	
		Barron-Welsh art scale: to choose unusual figures, set of figures differing in complexity, shading and symmetry	Self-report of mood of the day on single question, answered every evening during six weeks	r = +.08, ns	
			Self-report of overall happiness on Cantril ladder	r = –22, ns	
Female College students, USA	31	Rod-and frame test and the embedded figures test	Self-report of average affect in 16 item 'elation-depression scale'	r = +.05, ns	Tobacyk (1981)
Canadian WW II veterans	326	Digit span	Memorial University of Newfoundland Scale of Happiness (MUNSH)	+.19 ns	Arbucle et al. (1992)
		Story recognition		+.16 ns	
		Cued recall		+.08 ns	
		Free recall		+.05 ns	

Appendix B3

Current IQ and happiness – verbal test

Subjects	*N*	*Test of intelligence*	*Measure of happiness*	*Observed relationship*	*Study*
High school boys, USA	2,213	Test of reading comprehension	Self-report of being a 'happy person on six questions	r = +.02, ns	Bachman et al. (1970)
		Vocabulary test in general aptitude test battery		r = +.02, ns	
College students, USA	952	S.A.I.: verbal score in the form of local percentile rank SAT: verbal score in the form of local percentile rank	Self-report of average mood on single question	Difference ns	Constantinople (1965)
College students, USA	67	Advanced vocabulary test V-4	Self-report of mood of the day on single question, answered every evening during six weeks	r = +.16, ns	Gorman (1971)
			Self-report of overall happiness on Cantril ladder	r = +.07, ns	
		Assessment of mood repertoire using the number of words mentioned in 3 min	Self-report of mood of the day on single question, answered every evening during six weeks	r = +.12, ns	
			Self-report of overall happiness on Cantril ladder	r = +.01, ns	
Mentally retarded males	149	Rating by staff on seven point scale, talk unintelligently to talk well	Rating of general cheerfulness by two independent staff members who were familiar with the patient	Open ward: r = –.00, ns Closed ward: r = –.08, ns	Pandey (1971)
12 aged male school pupils, England	194	Paring opposite meaning words, reconstructing sentences	Peer rating of general cheerfulness	r = +.20, ns	Webb (1915)
18+ aged, USA	2,650	Shortened Thorndike intelligence test (verbal)	Self-report of overall happiness on single question	r = +.06, p < .01, beta = –.01, ns, controlling age, gender, race, education, family income, marital status, church attendance, political participation and health condition.	Sigelman (1981)

Appendix B4

Current intelligence and current happiness: comparison of normal and learning disabled persons

Subjects	*N*	*Measure of intelligence*	*Measure of happiness*	*Observed relationship*	*Study*
Normal and retarded boys, USA	80	Normal vs. retarded	Rating of general cheerfulness by parents	Retarded happier: p < .04	Cameron (1975)
			Time sampling of happy behaviour by two independent observers in both a class situation and at recess	Retarded boys happier Retarded girls not	
Institutionalised retarded males, USA	149	IQ test	Staff rating of general cheerfulness	ns	Pandey (1971)
18–77 aged, intellectually disabled	376	Normal vs. borderline vs. moderately disabled	Self report of overall happiness on single question	d = –.07, p < .07*	Matikka and Ojanen (2002)

Note: Somers d computed from frequency distribution.