

**THE EFFECTS OF WINNING THE LOTTERY ON HAPPINESS, LIFE
SATISFACTION, AND MOOD**

A report for Camelot Group

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This report details the results of a survey that measured different aspects of happiness, subjective well-being, and life satisfaction among National Lottery winners and a comparison group with similar demographic profiles. Lottery winners overwhelmingly reported that they were happier as a result of winning the lottery, and most attributed this to improved financial security, fewer pressures and an increase in time available to spend with their families. On all of the psychological measures of happiness and subjective well-being that were measured lottery winners were significantly happier than non-winners. The study also examined some of the factors known to affect levels of happiness that may have resulted from winning the lottery. Lottery winners tended to take more frequent holidays than non-winners, although they were less likely to travel beyond the EU. Lottery winners tended to buy detached houses as a result of their lottery win but rarely moved more than a few miles from their residence prior to winning the lottery; suggesting that they retain their social networks. There were no significant changes in the marital states of lottery winners other than a slight increase in marriages post-win. The majority of lottery winners reported that since winning they had either taken early retirement or listed their occupation as 'none'. Of those that continued to work the majority became self-employed or invested in businesses. Lottery winners enjoy healthier lifestyles than the comparison group: Lottery winners were more likely to abstain from alcohol and tend to exercise more than the comparison group. Lottery winners visit their GP less often than the comparison group. Lottery winners became happier with age, and as they adapt to their new lifestyle. By contrast the comparison group tended to become less happy with age. Lottery winners were happiest if living in either Scotland or the South East of England. The comparison group were also happiest in Scotland, but by contrast were least happy in the South East.

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1 INTRODUCTION

The United Kingdom consistently scores as one of the happiest countries in the world (Marks et al, 2006). Many economists believe that wealth is synonymous with happiness and many psychologists believe that wealth brings us happiness by enabling us to reach the goals in our personal lives. So it comes as little surprise that people are happiest in western developed nations and least happy in underdeveloped southern hemisphere nations. In recent years there has been an increase in interest in happiness and life-satisfaction in both academic and public policy circles. Most recently of course the BBC aired a six-part documentary that examined the science of happiness. Since 1999 a key priority of the Department for Environment and Rural Affairs (DEFRA) has been to track changes in a number of key indicators affecting quality of life and to modify government policy accordingly. It should not come as a surprise that in their 2002 report DEFRA found that 48% of interviewees said that money was the most important factor affecting their quality of life.

1.1 What is happiness?

Happiness is an ill-defined concept due in part to its having many different components. Nonetheless psychologists are able to measure happiness by asking people to make numerical ratings to a series of adjectives or statements that together give statistically valid measures of subjective well being that correspond to a variety of different definitions of happiness. Some researches make a distinction between affective and cognitive components of subjective well-being that reflect on the one hand, our general mood states and on the other, our appraisal of the quality of our lives. Many studies assess happiness by simply asking people to rate their happiness on a single scale. Others have favoured a scale known as Satisfaction with Life that measures whether or not a person has reached their ideal state, their living conditions, and whether or not they would change anything about their life. This scale is validated and credible in the psychological literature, used worldwide and reflects government concerns about quality of life issues.

1.2 Happiness and Wealth

If wealth makes us happier by enabling us to achieve our personal goals then we would expect to see a strong relationship between income and happiness.

However previous research on the relationship between income and income change has produced weak or equivocal results. For instance in international samples Veenhoven (1994), Haring, Stock, and Okun (1984), Deiner, Sandvik, Seidlitz and Diener (1993) all found positive correlations between income and subjective-well being; although Clark and Oswald (1994) found no such correlation in the UK. These studies have almost invariably been based on salaries which have a relatively narrow range over which to measure happiness. An alternative has been to examine the effects of windfalls in the form of lottery or football pools wins on levels of happiness compared to people from similar backgrounds who have received no windfalls. Inevitably there have been few studies of this kind.

In the USA Brickman, Coates, and Janoff-Bulman (1978) found that Illinois State lottery winners were slightly happier than their comparison group. Questions took the form of "Has your lifestyle changed in any way, since you won?". As a measure of happiness respondents were asked to rate how happy they were on a 6-point scale (0 = very unhappy, 6 = very happy) at this stage in their lives. Although lottery winners in this study reported that winning had been a highly positive event in their lives only 23% reported that their lifestyle in general had changed. Lottery winners gave an average happiness rating of 4.00 compared to an average of 3.82 for their comparison group. However, their sample was relatively small (22) with relatively small wins that for the most part may have been insufficient to change lives (7 won \$1,000,000, 6 won \$400,000, 2 won \$300,000 and 3 won \$50,000). So although lottery winners were marginally happier than the comparison group, the small sample size, small wins and the lack of sophistication of the scale meant that the results did not reach statistical significance.

More recently Gardner, and Oswald (2005; see also Gardner & Oswald, 2001) obtained data from the British Household Panel Survey. This survey provides information on 5000 British households that are representative of the UK population over a number of years. Inevitably this survey will pick up a number of lottery or pools winners that can be utilized to examine the effect of lottery wins on subjective well-being. The survey includes a General Health Questionnaire that is often interpreted as a measure of psychological health and well-being. Although this survey contains a large sample the magnitude of the lottery wins were relatively small and were unlikely to be significantly life changing events. They divided their sample into people who won nothing, small winners (less than

£1000) and large winners (more than £1000). The average win for small winners was a mere £70.50, and for large winners the average was £4300. The maximum win in the sample was £117,000. Nonetheless, this study revealed an improvement in psychological well-being following medium to large (relatively) windfalls. Interestingly there was a decrease in well-being immediately following a win but this improved over and above the well-being of the comparison groups.

Perhaps the most comprehensive study comes from the UK. Smith and Razzall (1975) studied football pools winners. A key feature here is that many of the wins were sufficiently large to dramatically change lives. The majority of their report is sociological in nature and consists of open ended interviews. Interviewees lived in "elegant houses" in "superior neighbourhoods", drove "elegant cars", and took frequent holidays to what would at the time have been considered exotic locations. The majority took early retirement, but continued to see the same circle of friends rather than involve themselves in "high culture". Interestingly at a time when voting behaviour was closely linked to class and income, pools winners tended to change their vote to Conservative. Using the same measure as Brickman et al (1978) they found that 77% reported being happier as a result of their win. Approximately 42% reported being very happy compared to only 20% of their comparison group.

1.3 Overview of the survey

This study was conducted on behalf of Camelot Group PLC. The study involved questionnaires given to lottery winners and a pseudo-random opportunity sample of non-winners for comparison. The core measure of happiness and subjective-well being used in the study was the **satisfaction with life scale**. This involves respondents giving a response ranging from 1 to 7 (strongly disagree to strongly agree) to five statements. This results in a score that ranges from 5 (extremely dissatisfied) to 35 (extremely satisfied). To measure general mood state the questionnaire included 29 items from the **UWIST Mood adjective checklist**. The adjectives were graded by intensity on a scale of 1 to 4 (definitely to definitely not) and are classified into four factors: hedonic tone, tense arousal, energetic arousal, and anger/frustration. Higher scores indicated a high happiness rating for hedonic tone, a high anxiety rating for tense arousal, and a high energy rating for energetic arousal. The maximum score that could be attained for each of the three mood components was 32, and the minimum score was 8. Two additional measures of happiness and satisfaction were obtained using

components of scales from the **International Personality Inventory**- Both involve giving ratings of 1 to 5 (very inaccurate to very accurate) to statements about themselves. The resulting scores for happiness range from 10 (unhappy) to 50 (very happy); satisfaction scores range from 9 (very dissatisfied) to 45 (very satisfied).

To give some indication of how wealth and lifestyle are related respondents were asked to indicate what kind of house they lived in and in what postal town (lottery winners were also asked where they used to live). We also asked about the frequency of holidays and holiday destinations, and about previous and current occupations. Because happiness is thought to be related to health we also asked about how frequently respondents took exercise, visited their GP, drank alcohol and smoked.

Responses were obtained from 34 lottery winners and 40 non-winners with similar demographic profiles for comparison. Data from the lottery winners were provided by Camelot. Data from the comparison group were obtained via UK University collaborative subject pools. No constraints were placed on the demographics of the comparison group and as such the comparison group reflects a pseudo random opportunity sample that theoretically should reflect that of the UK population.

2.1.1 Gender, age, and salary of respondents

The number of males and females in each group are shown in **Table 2.1.1**. The high proportion of female respondents most likely reflects the greater willingness of females to complete questionnaires of any kind. The average age and ranges of the two samples are similar as are the average salaries of the comparison group and the lottery winners from their previous occupation.

Table 2.1.1 Gender, age, and salary of respondents

		Winners	Comparison Group
	Males	8	13
	Females	26	27
Age	Average	46	41
	Minimum	24	25
	Maximum	68	67
Salary	Average	£21,113	£21,920
	Minimum	£0	£0
	Maximum	£151,000	£75,000

2.1.2 Marital status of respondents

In previous studies married people report greater happiness than those who have never married, or are divorced, separated or widowed. People who are partnered or co-habit also report higher levels of happiness than those who live alone (Mastekaasa, 1995). The marital states of the two samples are shown in **Table 2.1.2**. The marital states of the lottery winners prior to their win are similar to that of the comparison group. Note that the percentages of winners who are either single or partnered decreases following their lottery win as marriage increases. Marriage is a clear indicator of happiness. Only one of the respondents indicated divorce or separation post-win.

Table 2.1.2 Marital status of respondents

	Winners		Comparison Group
	Pre-win	Post-win	
Single	15%	12%	5%
Partnered	12%	9%	18%
Married	68%	74%	68%
Divorced/Separated	3%	6%	8%
Widowed	3%	3%	3%

Note: For marital status the post-win percentages do not sum to 100% as widowed people have entered new relationships.

2.1.3 Geographical location of respondents

Because we wished to examine the relationship between geographical location and happiness we asked respondents to indicate where they were living at the time of their lottery win and where they live subsequently. **Table 2.1.3** shows the distribution of respondents by UK area. We obtained a broadly similar distribution of respondents for the comparison group. No data is available for Northern Ireland. It's worth noting that the lottery winners remain close to the town where they were living at prior to their lottery win - none indicated a change of region and most remained in the same postal town.

Table 2.1.3 Geographical location of respondents

	Winners		Comparison Group
	Pre-win	Post-win	
South (inc. SW)	15%	15%	8%
South East	18%	18%	15%
East	12%	12%	5%
Midlands	12%	12%	20%
North West	3%	3%	20%
Wales	6%	6%	8%
North East	29%	29%	15%
Scotland	6%	6%	10%

2.2 Occupation

Both the comparison group and the lottery winners were asked to indicate their current occupation and salary. We also asked lottery winners whether they remained in their previous occupation, retired or adopted a new one.

2.2.2 Occupational status of lottery winners prior to win and comparison group

Occupations were coded according to the Office of National Statistics method of defining socio-economic status known as the Standard Occupational Classification (SOC2000). Broadly, a lower Major Group number indicates a higher income, level of education, and responsibility. This information is important because, unsurprisingly, previous research indicates that higher socio-economic groups enjoy greater satisfaction with their lives. **Table 2.2.2** shows the Standard Occupation Classification of lottery winners and the comparison group.

Table 2.2.2 Standard Occupational Classification (2000) of respondents

Major Group	Descriptor	Winners	Comparison group
		Percent	Percent
1	Managers and Senior Officials	3%	0%
2	Professional Occupations	16%	30%
3	Assoc. Professional/ Technical Occupations	3%	15%
4	Adm. and Secretarial Occupations	19%	18%
5	Skilled Trades Occupations	6%	5%
6	Personal Service Occupations	3%	3%
7	Sales and Customer Service Occupations	29%	10%
8	Process, Plant and Machine Operatives	6%	5%
9	Elementary Occupations	0%	0%
—	Retired	7%	8%
—	Unknown	6%	—
—	Unemployed	3%	8%

2.2.2 Changes in occupation, age and lottery win

Winning the lottery clearly changes people's lives with respect to their occupation. Only 19% continue to work in their previous occupation and these tended to win less money. Those with higher wins who chose to remain in their previous occupation tended also to have higher occupational status. Others who continue to work tend to do so self-employed or as part of a business that they bought. These are characterized by smaller wins and lower occupational status. Respondents who no longer work as a result of their lottery win tended to win more money. Older people simply retire early (only two respondents were retired before their win). Younger people reported their occupation as 'none'. Respondents in both of these categories come from lower socio-economic groups. A small number of respondents reported their occupation had changed to housewife, which could mean that they might be better placed in the 'none' category. These tend to be younger and to have received relatively high wins.

Table 2.2.2 Changes in occupation, age and lottery win

		Average age	Percent	Average win	Average SOC2000
Working	Same	43	19%	£863,392	4
	Misc. other/self employed	33	33%	£1,975,000	6
Not working	Retired	55	34%	£2,647,089	5
	None	44	25%	£2,046,875	6
	Housewife	29	9%	£6,105,921	3

2.2.3 Investments

We asked lottery winners to indicate what investments they may have made with their lottery win. The percentages of responses are shown in **Table 2.2.3**. The majority invested in stocks and shares. Roughly as third indicated none or gave no response. Twenty-one percent invested in some form of business.

Table 2.2.3 Investments

Investment	Percent
Bought business	10%
Invested in business	6%
New business	6%
Stocks & Shares	54%
None	29%

Note: Percentages do not sum to 1 because some respondents made more than one kind of investment.

2.3 Lifestyle and Health

Lottery winners and the comparison group were asked to provide limited information for a number of indicators of lifestyle that are known to be related to happiness and subjective well-being.

2.3.1 Housing

An obvious use of money and potential determinant of happiness is the kind of house a person lives in. Winners were asked what kind of house they lived in before they won the lottery and what kind of house they lived in now. **Table 2.3.1** shows the percentages of respondents living in each type of housing compared to the national average. The distribution of housing for lottery winners prior to winning the lottery is similar to the national average and the comparison group. A clear shift following a lottery win is to move to a detached house. Its worth pointing out that of those who reported living in the same house either already owned a detached house or their lottery win was very recent. Also of note is the fact that by far the majority continue to live in the same postal town even when they have bought a new house.

Table 2.3.1 Housing

	Flat or maisonette	Terraced	Semi- detached	Detached	Other	Same house
Winners (pre-win)	6%	15%	41%	32%	3%	—
Winners (post-win)	3%	6%	18%	68%	3%	36%
Comparison Group	8%	28%	45%	20%	—	—
National average	20%	28%	31%	21%	—	—

2.3.2 Holidays frequency

Another obvious use of money and potential determinant of happiness is the frequency with which people take a holiday. We asked lottery winners how often they took a holiday before and after they won the lottery. The results are shown in **Table 2.3.2** and show that prior to winning the lottery respondents took, on average, a similar number of holidays per year to the comparison group. Since winning the lottery respondent now take on average 3 holidays a year, with 35% of respondents taking four or more holidays each year.

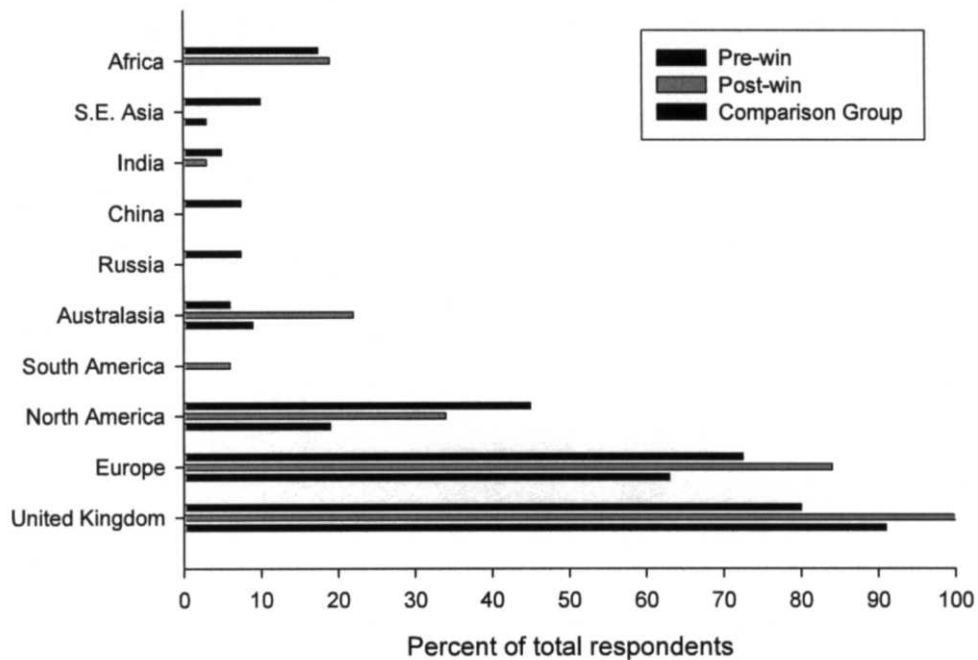
Table 2.3.2 Holiday frequency

	Never	One a year	Two a year	Three a year	Four or more a year	Average
Winners (pre-win)	9%	50%	29%	9%	3%	1.5
Winners (post-win)	0%	6%	26%	32%	35%	3.0
Comparison Group	10%	35%	38%	13%	5%	1.7

2.3.3 Holidays destinations

One might expect lottery winners to travel to more exotic and potentially expensive locations than the comparison group. **Figure 2.3.2** shows the holiday destinations of lottery winners prior to their win, after their win and the comparison group. Although lottery winners take more holidays than they did before and more than the comparison group, they are no more adventurous in terms of destination than the comparison group. Indeed none of the lottery winners appear to have 'seen the world' and the majority seem to favour holidays in the European Union. One might hypothesize that lottery winners are buying second homes in the Mediterranean.

Figure 2.3.3 Holiday destinations



2.3.4 Exercise, GP visits, Smoking and Drinking

Respondents were asked to indicate how often they visited a doctor, took exercise, smoked and drank alcohol. Frequency of exercise and GP visits are reasonable indicators of subjective well-being. If people have more leisure time then they are more likely to take exercise and this can lead to an increase in happiness. The corollary of this, and given lottery winners are unlikely to work in poor environmental conditions, is that they might be less likely to require medical advice. **Table 2.3.4** supports this hypothesis. Fewer lottery winners than the comparison group reported taking no exercise at all. Similarly, lottery winners were more likely to never see a GP than the comparison group.

Table 2.3.4 Frequency of Exercise, GP visits, Smoking and Drinking

		Never	Once a year	Once a month	Once a week	More than once a week
Exercise	Winners	9%	6%	12%	21%	41%
	Comparison group	15%	0%	13%	33%	40%
GP visits	Winners	21%	62%	15%	3%	0%
	Comparison group	8%	68%	25%	0%	0%
Drinking	Winners	18%	0%	9%	29%	34%
	Comparison group	8%	3%	8%	25%	58%

		Never	Socially	5 per day	10 per day	20+ per day
Smoking	Winners	68%	6%	3%	3%	16%
	Comparison group	80%	3%	8%	3%	8%

Tobacco and alcohol consumption are known to correlate with low income and stress. If so then we might expect lottery winner to drink and smoke less than the comparison group. **Table 2.3.4** supports this — 18% of lottery winners abstained from alcohol compared to only 8% in the comparison group. At the other end of the scale, nearly two thirds of the control group drank alcohol more than once a week compared to about one third of the lottery winners. The results were less positive for smoking although neither the lottery winners nor the comparison group data fit with the national statistics.

Note: The average number of GP consultations per year is 4. **Note:** The method of measuring alcohol consumption for national statistics differs from the one used here. To give some indication about 22% of men and 13% of women reported drinking on at least five of the seven day census period of the General Household Survey.

Note: The percentages of light smokers and heavy smokers nationally is 18.5% and 8% respectively (where light smoking is defined as less than 20 per day is 18.5% and heavy smoking as more than 20 a day).

The Satisfaction with Life scale forms the main psychological measure of happiness used in this survey. Nonetheless we also asked respondents if their lottery wins had made them happy and if so why. These data are shown in **Table 3.1.1**. The results show that a large majority of lottery winners feel happier as a result of their win and of these the reasons are mostly a result of having fewer pressures and more time to spend with their families.

Table 3.1.1 Do lottery winners feel happier and if so why?

		Reason for response	Percent of respondents in this category	Percent of total respondents
Happier	76%	Financial security	88%	68%
		I can buy or do what I like	35%	26%
		Fewer pressures	54%	41%
		More time to spend with family	58%	44%
		Other	4%	3%
No difference	21%	I was happy anyway	71%	15%
		Different pressure	14%	3%
		Other	14%	3%
Less happy	3%	New pressures	100%	3%
		Money causes arguments	0%	0%
		Miss working	0%	0%
		Money led to separation	0%	0%
		Other	0%	0%

The Satisfaction with Life Scale (**SWLS**) was developed by Prof. Ed Diener at the University of Illinois. The SWLS is a short, 5-item instrument designed to measure global cognitive judgments of one's life. As such it gives an indication of a person's conscious appraisal of the quality of their life. A description of psychometric properties of the scale can be found in Pavot and Diener (1993). Respondents are asked give a response ranging from 1 to 7 (strongly disagree to strongly agree) to five statements. These results are categorized on a scale that ranges from 5 (extremely dissatisfied) to 35 (extremely satisfied). The specific items and response frequencies are shown in the appendix.

Table 3.2.1 Overall satisfaction with life (happiness)

Category (SWLS Score)	Winners	Comparison group
Extremely Satisfied (31-35)	38%	25%
Satisfied (26-30)	47%	35%
Slightly Satisfied (21-25)	6%	20%
Neutral (20)	6%	0%
Slightly Dissatisfied (15-19)	0%	10%
Dissatisfied (10-14)	0%	8%
Extremely Dissatisfied (5-9)	0%	3%
Average Satisfaction with Life score	29	26

The comparison group were actually happier than would be expected on the basis of previous research. This may be the result of the recent spell of good weather. Despite this the difference between the lottery winners and the comparison group's average score are significantly different in statistical terms. Moreover, categorically 38% of lottery winners are extremely satisfied compared to only 25% of the control group. None of the lottery winners were in any way dissatisfied 21% of the comparison group. In short lottery winners are clearly happier than the comparison group.

3.2.2 Satisfaction with life by geographical location

Is there a relationship between where we live and how happy we are? On a purely economic basis it seems reasonable to assume that most people could afford a better lifestyle (for instance a larger house or greater disposable income) if they were to move to an area cheaper than their own. Of course, this assumption only holds if the cheaper area can provide the desired lifestyle. **Table 3.2.2** give two league tables for the happiness of our respondents; one for lottery winners, and one for the comparison group. A comparison of the top and bottom ends of each table gives some indication of what determines people's happiness. Both lottery winners and the comparison group are happiest living in Scotland. However, for lottery winners the South East is joint first with Scotland, but bottom of the table for the comparison group; where respondents were on average only slightly satisfied. In our survey people are happy living in the South East if they can afford to live there. To illustrate this point average house prices are included in the table. The average salary of the control group respondents living in the South East was £26,181, very close to that of respondents living in Scotland £26,981 where house prices are cheaper.

Table 3.2.2 Satisfaction with life by geographical location

Winners			
Rank	Location	Average SWLS Score	SWLS Category
1	Scotland	31.0	Extremely Satisfied
1	South East	31.0	Extremely Satisfied
2	Midlands	30.0	Satisfied
3	North East	29.7	Satisfied
4	East	28.3	Satisfied
5	Wales	28.0	Satisfied
5	North West	28.0	Satisfied
6	South	27.8	Satisfied

Comparison Group

Rank	Location	Average SWLS Score	SWLS Category	Average House price
1	Scotland	32.0	Extremely Satisfied	£124,481
2	East	27.5	Satisfied	£162,769
3	Midlands	27.3	Satisfied	£158,343
4	Wales	26.7	Satisfied	£143,450
5	North East	26.5	Satisfied	£139,967
6	South	25.7	Satisfied	£198,952
7	North West	23.5	Slightly Satisfied	£137,583
8	South East	21.3	Slightly Satisfied	£228,762

Note: Average house prices were obtained from the England & Wales Land Registry and the Registers of Scotland.

3.2.3 Satisfaction with life and occupation

Is it the case that happiness is related to occupational group? If so does winning the lottery affect people from different occupational groups in different ways? These data are shown in **Table 3.2.2**. The data from our survey show no discernable pattern for either the lottery winners or the comparison group.

Table 3.2.2 Occupational group and happiness

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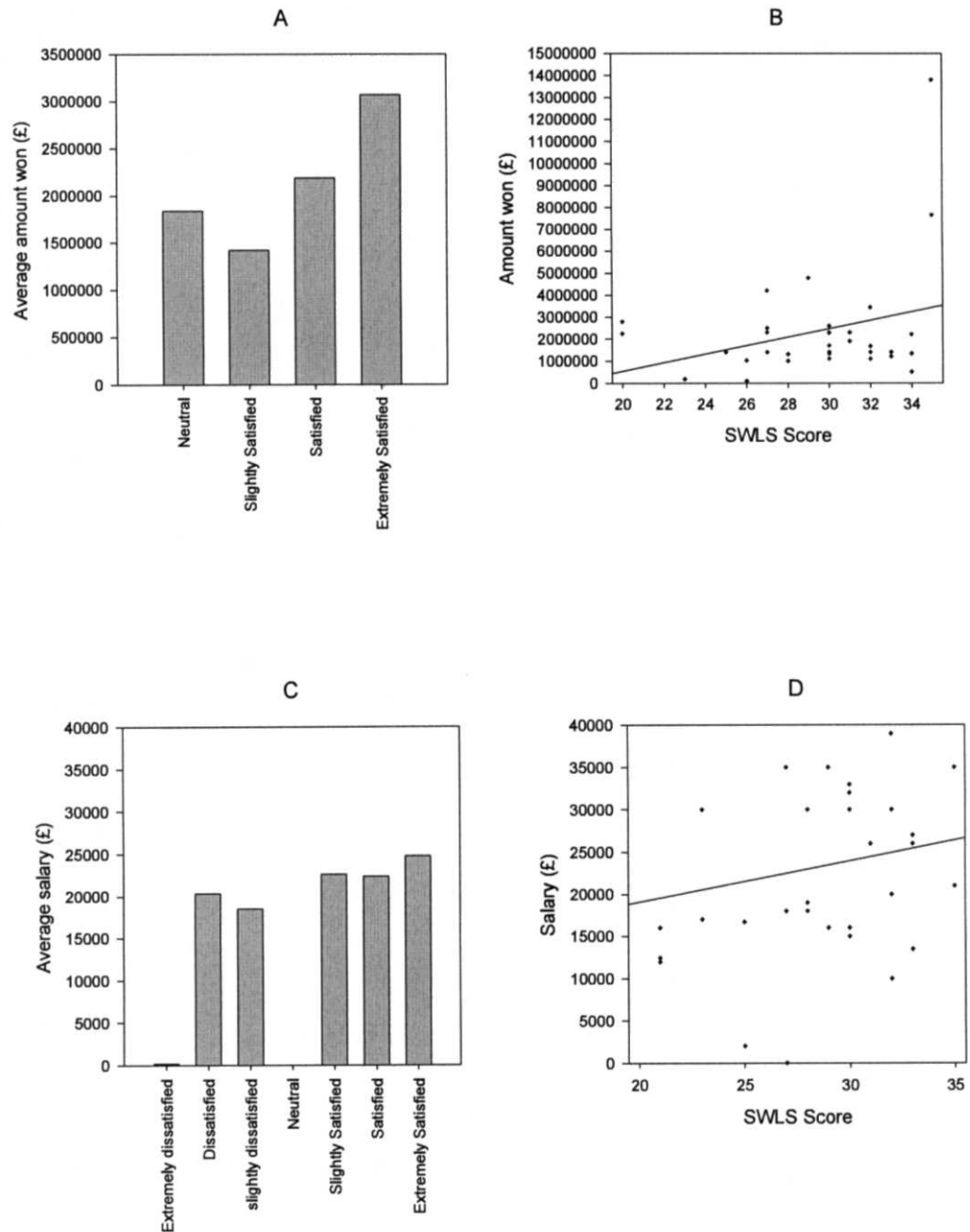
Major Group	Descriptor	Winners		Comparison Group	
		Average SWLS Score	SWLS Category	Average SWLS Score	SWLS Category
1	Managers & Senior Officials	34	Extremely satisfied	—	
2	Professional Occupations	31	Extremely satisfied	30	Satisfied
3	Associate Professional & Technical Occupations	28	Satisfied	26	Satisfied
4	Administrative & Secretarial Occupations	29	Satisfied	28	Satisfied
5	Skilled Trades Occupations	31	Extremely satisfied	19	Slightly Dissatisfied
6	Personal Service Occupations	27	Satisfied	14	Dissatisfied
7	Sales & Customer Service Occupations	28	Satisfied	27	Satisfied
8	Process, Plant & Machine Operatives	26	Satisfied	25	Slightly Satisfied
9	Elementary Occupations	—	—	—	—
—	Retired	34	Extremely satisfied	25	Slightly Satisfied
—	Unemployed	30	Satisfied	15	Slightly Dissatisfied
—	Unknown	29	Satisfied	—	—

3.3.4 Magnitude of lottery win and life satisfaction

To what extent does the magnitude of a lottery win affect satisfaction with life?

Figure 3.3.4 shows how as the amount a person wins by playing the lottery their satisfaction with life clearly shows an increasing trend. **Panel A** shows the average lottery win for respondents whose life satisfaction falls into the top four categories. **Panel B** shows the linear increasing relationship between the amount respondents won on the lottery and their SWLS score. **Panels C** and **Panel D** show the same relationship for the comparison group's salary

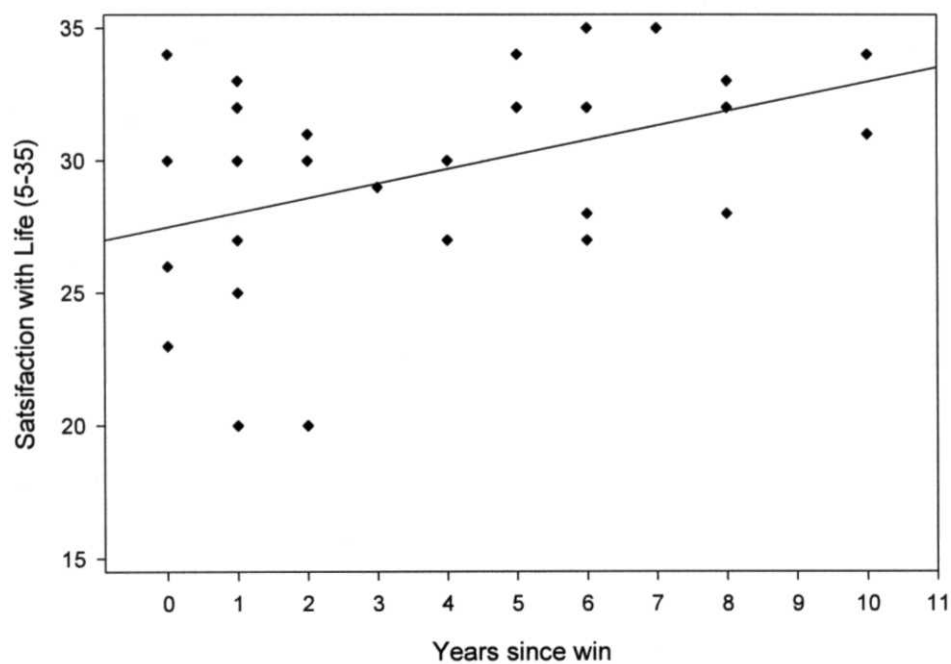
Figure 3.3.4 The relationship between the magnitude of lottery wins and life satisfaction (A & B), and comparison group salary and life satisfaction (C & D)



3.3.5 The hedonic treadmill

Previous studies indicate that receiving a windfall such as winning the lottery results in an initial increase in happiness but after a period of years, levels of happiness return to their set point (i.e. a person's baseline level of happiness). To test this we can correlate measure of happiness against the number of years since winning the lottery. In contrast to previous research and received wisdom we find the opposite result: happiness increases with the number of years since winning the lottery. This suggests that people adjust well to their new lifestyles.

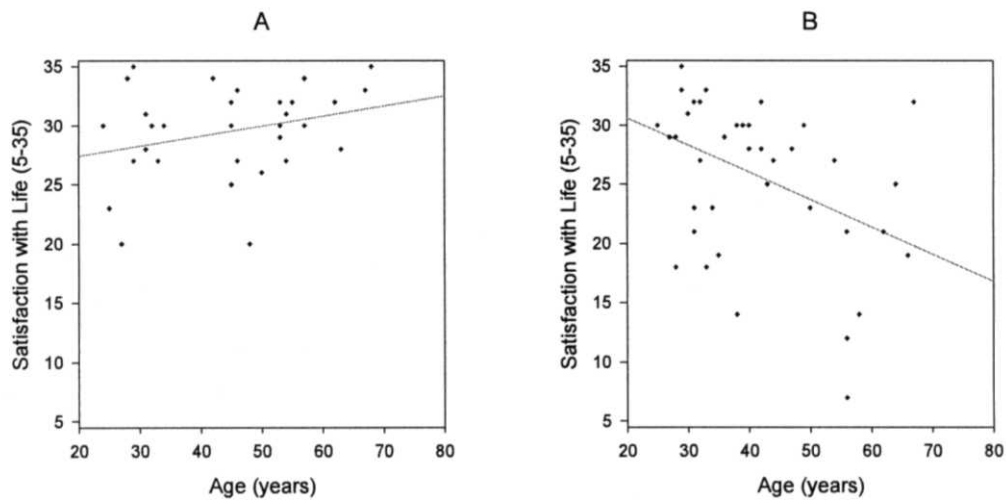
Figure 3.3.5 Relationship between life satisfaction and time since win



3.3.6 Age and Satisfaction with Life

Previous research indicates that satisfaction with life and happiness shows a small decline with age. However, there is some indication that this decline is either eliminated or reversed when factors such as health and income are controlled (Shmotkin, 1990). The data from our study indicate that lottery winners are happier as they get older and this contrasts sharply with the comparison group who show a marked decline in happiness with age.

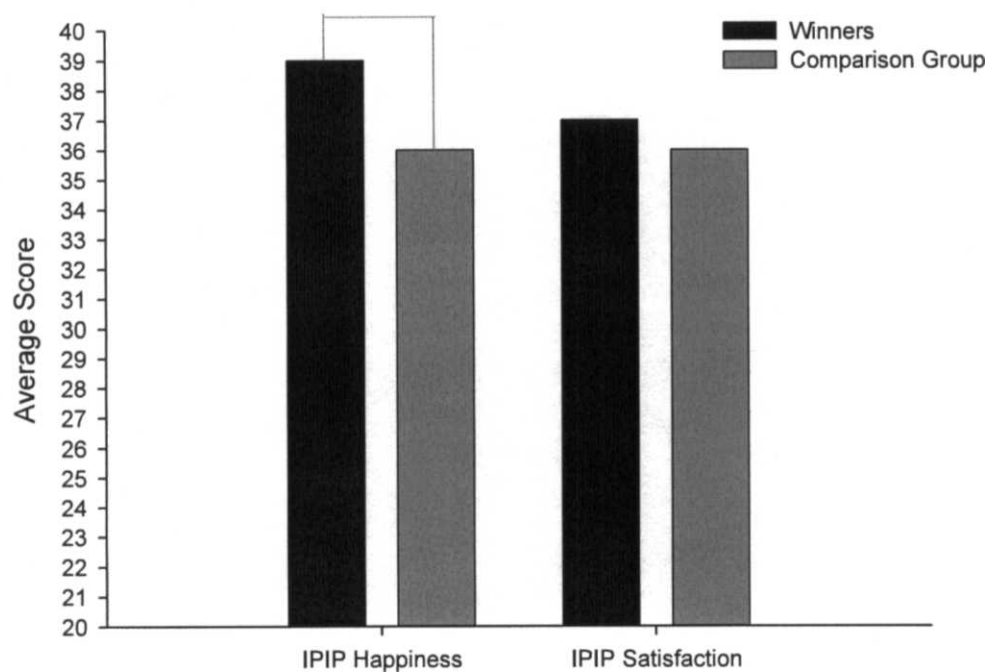
Figure 3.3.6 Relationship between life satisfaction and age: Panel A Lottery winners, Panel B comparison group.



Additional independent measures of happiness and satisfaction were obtained via items from the **International Personality Inventory (IPIP)**. IPIP Happiness gives an estimate of an individual's level of happiness as part of their personality make-up as defined by the current standard model - the Abridged Big Five-Dimensional Circumplex (AB5C). We also measured satisfaction using the negative keyed items that measure constructs similar to those in Cloninger's Temperament and Character Inventory (TCI).

Happiness ranges from 10 (unhappy) to 50 (very happy). Satisfaction ranges from 9 (very dissatisfied) to 45 (very satisfied). Along these measures lottery winners were marginally happier than the comparison group but no different in satisfaction. This pattern of results confirms the interpretation of the Satisfaction with Life Survey as a measure of happiness. The specific items and response frequencies are shown in the appendix.

Figure 4.1 IPIP Happiness and Satisfaction

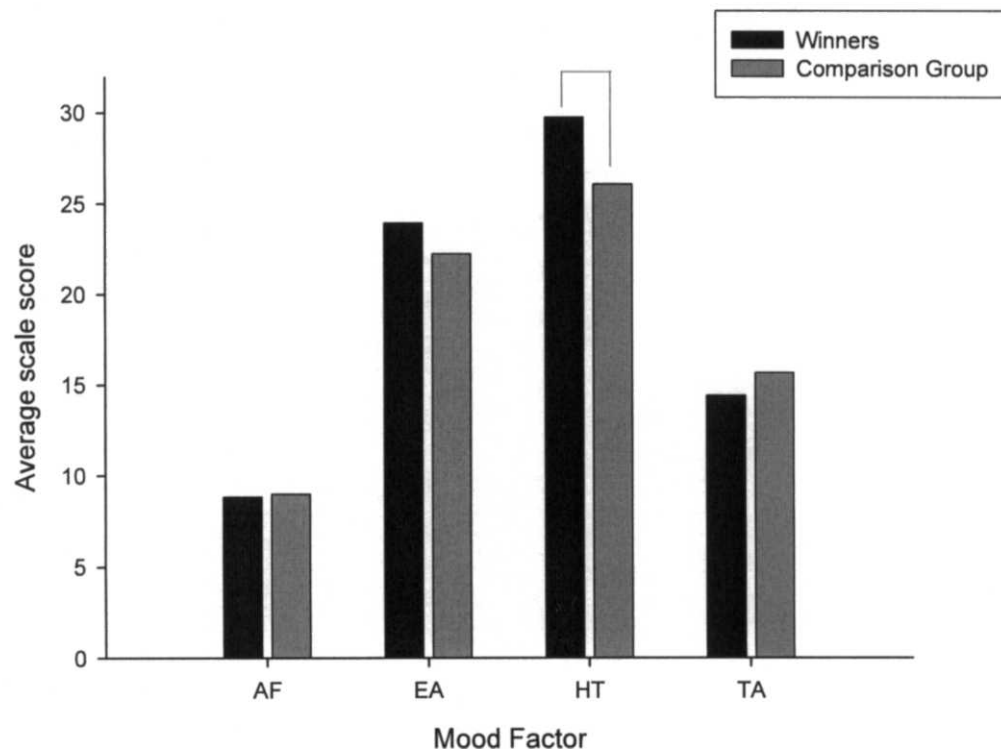


General mood state was measured using the **USIST mood adjective checklist** (Matthews, Jones & Chamberlain, 1990). The UWIST comprises three main bipolar scales - Energetic Arousal, Tense Arousal and Hedonic Tone - plus an additional, monopolar Anger/Frustration scale. The adjectives were graded by intensity on a scale of 1 to 4 and were classified into three groups: hedonic tone, tense arousal, and energetic arousal. The adjectives used to describe hedonic tone in the questionnaire included cheerful, happy, contented, sorry, depressed, dissatisfied, sad, and satisfied. The degree of tense arousal was described by the adjectives composed, anxious, jittery, calm, tense, passive, and relaxed, and energetic arousal was described by vigorous, sluggish, restful, active, energetic, unenterprising, tired, and alert. Higher scores indicated a high happiness rating for hedonic tone, a high anxiety rating for tense arousal, and a high energy rating for energetic arousal. The maximum score that could be attained for each of the three mood components was 32, and the minimum score was 8. The specific items and response frequencies are shown in the appendix.

Figure 5.1 shows the average scores for each mood factor for lottery winners and the comparison group. There was a clear and highly significant difference (statistically) **in Hedonic Tone (HT)** between the lottery winners and the comparison group. There was also trend (approaching statistical significance) for higher **Energetic Arousal (EA)** in the lottery winners; and lower **Tense arousal (TA)**.

A key feature of these four measures is that they are, unlike the earlier measures, affected by day to day stressors. Specifically, sleep deprivation reduces Energetic Arousal and Hedonic tone but increases Tense Arousal. Similarly, workload increases Tense Arousal but decreases both Energetic Arousal and Hedonic Tone. Thus, the increase in Hedonic Tone and Energetic Arousal observed in the lottery winners is likely to be due to a reduction in external stress. This is corroborated by an increased level of Tense Arousal in the comparison group.

Figure 5.1 General mood state of respondents



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7 APPENDIX

Table 7.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	3	6	19	48	23
The conditions of my life are excellent	0	0	10	3	6	52	29
I am satisfied with my life	0	0	0	3	6	59	31
So far I have gotten the important things I want in life	0	0	3	10	13	42	32
If I could live my life over I would change almost nothing	0	0	6	13	19	39	23
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	3	5	8	8	23	48	8
The conditions of my life are excellent	3	5	5	10	15	48	15
I am satisfied with my life	3	8	8	8	18	40	18
So far I have gotten the important things I want in life	0	8	0	13	15	30	35
If I could live my life over I would change almost nothing	8	10	15	8	25	23	13

O-Sum/u/wq/v/7/a

Table 7.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	7	33	23	37	10	43	20	28
+	AF	26. Annoyed	3	20	23	53	3	20	23	55
+	AF	27. Angry	3	17	13	67	3	10	13	75
+	AF	28. Irritated	3	20	13	63	8	18	18	58
+	AF	29. Grouchy	3	23	10	63	8	23	13	58
-	EA	7. Passive	10	38	28	24	8	35	30	28
-	EA	11. Sluggish	13	23	17	47	8	28	38	28
-	EA	19. Unenterprising	3	33	30	33	10	10	33	48
-	EA	24. Tired	7	53	20	20	20	43	18	20
+	EA	3. Energetic	33	63	3	0	15	45	30	10
+	EA	5. Alert	53	43	3	0	53	33	13	3
+	EA	16. Vigorous	17	52	21	10	3	40	33	25
+	EA	22. Active	50	37	10	3	20	53	20	8
-	HT	2. Dissatisfied	0	10	10	79	10	35	30	25
-	HT	12. Sorry	7	3	13	77	3	8	23	68
-	HT	14. Depressed	0	10	7	83	5	15	23	58
-	HT	20. Sad	0	7	13	80	0	20	18	63
+	HT	1. Happy	93	7	0	0	40	58	3	0
+	HT	8. Cheerful	79	21	0	0	43	53	5	0
+	HT	18. Satisfied	70	23	0	7	35	53	8	5
+	HT	23. Contented	80	17	3	0	33	58	5	5
-	TA	4. Relaxed	63	27	10	0	23	48	23	8
-	TA	13. Composed	38	48	7	7	38	50	10	3
-	TA	15. Restful	27	50	10	13	10	50	25	15
-	TA	21. Calm	50	40	10	0	28	63	8	3
+	TA	6. Nervous	0	41	21	38	3	30	18	50
+	TA	9. Tense	13	27	23	37	8	40	23	30
+	TA	10. Jittery	7	17	17	60	3	13	13	73
+	TA	17. Anxious	0	28	31	41	3	28	30	40

Table 7.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	16	13	6	48	16	3	28	20	30	20
Feel comfortable with myself	6	13	16	19	45	5	10	8	43	35
Adapt easily to new situations	3	16	0	45	35	5	13	18	30	35
Look at the bright side of life	6	3	6	55	29	3	10	23	38	28
Am sure of my ground	3	6	16	42	32	0	15	20	33	33
Often feel blue	48	39	3	10	0	33	35	13	20	0
Worry about things	23	16	13	45	3	10	23	13	35	20
Feel threatened easily	35	23	26	16	0	23	35	20	15	8
Dislike myself	65	19	10	3	3	30	30	23	15	3
Am filled with doubts about things	42	23	23	13	0	25	30	20	15	10
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	71	6	16	6	0	58	10	18	15	0
Feel that people have a hard time understanding me	40	20	27	7	7	43	13	23	20	3
Feel attacked by others	61	13	23	0	3	65	18	8	5	5
Suspect hidden motives in others	45	16	23	13	3	53	15	8	18	8
Am not in the mood for anything	67	17	10	7	0	55	25	10	10	0
Let myself be used	58	26	3	10	3	43	23	15	18	3
Am embarrassed to have people see my home	74	10	13	0	3	65	13	8	15	0
Withhold information from others	42	23	16	10	10	40	25	18	18	0
See events as unavoidable	50	7	30	7	7	35	28	20	18	0

Table 8.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	0	50	50
The conditions of my life are excellent	0	0	0	0	0	50	50
I am satisfied with my life	0	0	0	0	0	50	50
So far I have gotten the important things I want in life	0	0	0	0	0	50	50
If I could live my life over I would change almost nothing	0	0	0	0	100	0	0
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	0	100	0
The conditions of my life are excellent	0	0	0	0	0	25	75
I am satisfied with my life	0	0	0	0	0	25	75
So far I have gotten the important things I want in life	0	0	0	0	0	25	75
If I could live my life over I would change almost nothing	0	0	0	0	25	75	0

Table 8.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	0	50	0	50	25	25	0	50
+	AF	26. Annoyed	0	50	0	50	0	0	50	50
+	AF	27. Angry	0	50	0	50	0	0	0	100
+	AF	28. Irritated	0	50	0	50	0	0	50	50
+	AF	29. Grouchy	0	50	0	50	0	25	0	75
-	EA	7. Passive	50	50	0	0	0	75	0	25
-	EA	11. Sluggish	50	0	0	50	0	25	25	50
-	EA	19. Unenterprising	0	50	0	50	0	0	50	50
-	EA	24. Tired	0	50	0	50	0	25	25	50
+	EA	3. Energetic	100	0	0	0	50	25	25	0
+	EA	5. Alert	50	50	0	0	50	50	0	0
+	EA	16. Vigorous	50	50	0	0	25	50	25	0
+	EA	22. Active	50	50	0	0	50	50	0	0
-	HT	2. Dissatisfied	0	50	0	50	0	0	50	50
-	HT	12. Sorry	50	0	0	50	0	0	50	50
-	HT	14. Depressed	0	50	0	50	0	0	0	100
-	HT	20. Sad	0	50	0	50	0	0	0	100
+	HT	1. Happy	100	0	0	0	100	0	0	0
+	HT	8. Cheerful	100	0	0	0	100	0	0	0
+	HT	18. Satisfied	50	50	0	0	75	25	0	0
+	HT	23. Contented	50	50	0	0	75	25	0	0
-	TA	4. Relaxed	50	50	0	0	25	75	0	0
-	TA	13. Composed	50	50	0	0	50	50	0	0
-	TA	15. Restful	50	50	0	0	0	25	50	25
-	TA	21. Calm	50	50	0	0	50	50	0	0
+	TA	6. Nervous	0	0	50	50	0	0	0	100
+	TA	9. Tense	0	50	0	50	0	0	25	75
+	TA	10. Jittery	0	50	0	50	0	0	25	75
+	TA	17. Anxious	0	50	0	50	0	0	0	100

Table 8.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	0	50	0	0	50	0	0	25	0	75
Feel comfortable with myself	50	0	0	0	50	0	0	0	25	75
Adapt easily to new situations	0	50	0	0	50	0	0	0	75	25
Look at the bright side of life	50	0	0	0	50	0	0	0	0	100
Am sure of my ground	50	0	0	0	50	0	0	0	0	100
Often feel blue	50	50	0	0	0	50	25	25	0	0
Worry about things	50	50	0	0	0	50	25	0	25	0
Feel threatened easily	100	0	0	0	0	50	25	25	0	0
Dislike myself	100	0	0	0	0	50	0	50	0	0
Am filled with doubts about things	50	50	0	0	0	50	0	50	0	0
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	50	50	0	0	0	100	0	0	0	0
Feel that people have a hard time understanding me	50	0	0	0	50	50	0	25	25	0
Feel attacked by others	50	0	0	0	50	100	0	0	0	0
Suspect hidden motives in others	50	0	0	0	50	75	0	0	25	0
Am not in the mood for anything	50	50	0	0	0	100	0	0	0	0
Let myself be used	50	0	0	0	50	75	25	0	0	0
Am embarrassed to have people see my home	100	0	0	0	0	75	25	0	0	0
Withhold information from others	50	50	0	0	0	50	0	50	0	0
See events as unavoidable	50	50	0	0	0	50	25	0	25	0

Table 9.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	0	83	17
The conditions of my life are excellent	0	0	0	0	17	67	17
I am satisfied with my life	0	0	0	0	0	67	33
So far I have gotten the important things I want in life	0	0	0	17	0	33	50
If I could live my life over I would change almost nothing	0	0	0	0	17	33	50
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	33	0	17	17	33	0
The conditions of my life are excellent	0	17	17	0	17	50	0
I am satisfied with my life	0	50	0	0	17	33	0
So far I have gotten the important things I want in life	0	17	0	33	0	33	17
If I could live my life over I would change almost nothing	0	33	17	17	0	33	0

Table 9.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	17	17	50	17	0	50	0	50
+	AF	26. Annoyed	17	0	33	50	0	33	0	67
+	AF	27. Angry	17	0	17	67	0	17	17	67
+	AF	28. Irritated	17	0	17	67	17	33	0	50
+	AF	29. Grouchy	17	0	17	67	17	33	0	50
-	EA	7. Passive	17	50	33	0	17	17	17	50
-	EA	11. Sluggish	17	17	17	50	17	33	33	17
-	EA	19. Unenterprising	17	33	17	33	33	0	17	50
-	EA	24. Tired	17	50	17	17	17	50	33	0
+	EA	3. Energetic	33	67	0	0	17	33	33	17
+	EA	5. Alert	50	33	17	0	33	33	33	0
+	EA	16. Vigorous	0	83	17	0	0	50	17	33
+	EA	22. Active	50	33	17	0	17	33	33	17
-	HT	2. Dissatisfied	0	17	0	83	0	33	50	17
-	HT	12. Sorry	17	0	17	67	0	0	17	83
-	HT	14. Depressed	0	17	17	67	17	0	17	67
-	HT	20. Sad	0	0	33	67	0	0	50	50
+	HT	1. Happy	83	17	0	0	17	83	0	0
+	HT	8. Cheerful	80	20	0	0	17	67	17	0
+	HT	18. Satisfied	50	33	0	17	17	67	0	17
+	HT	23. Contented	83	17	0	0	33	50	0	17
-	TA	4. Relaxed	67	17	17	0	33	50	17	0
-	TA	13. Composed	33	50	0	17	0	67	33	0
-	TA	15. Restful	17	33	0	50	17	67	0	17
-	TA	21. Calm	50	33	17	0	33	67	0	0
+	TA	6. Nervous	0	33	33	33	0	33	17	50
+	TA	9. Tense	33	33	17	17	0	50	17	33
+	TA	10. Jittery	17	17	17	50	0	0	0	100
+	TA	17. Anxious	0	50	17	33	0	0	33	67

Table 9.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	33	17	0	50	0	0	67	17	17	0
Feel comfortable with myself	0	17	17	33	33	0	33	17	17	33
Adapt easily to new situations	0	0	17	67	17	0	0	17	17	67
Look at the bright side of life	0	0	0	67	33	0	0	33	67	0
Am sure of my ground	0	0	17	67	17	0	0	33	33	33
Often feel blue	33	33	17	17	0	17	50	17	17	0
Worry about things	33	0	33	33	0	17	17	17	17	33
Feel threatened easily	33	0	33	33	0	17	50	17	17	0
Dislike myself	67	17	0	17	0	0	50	33	17	0
Am filled with doubts about things	67	0	17	17	0	0	33	33	33	0
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	83	0	17	0	0	67	17	0	17	0
Feel that people have a hard time understanding me	50	17	17	17	0	83	0	0	17	0
Feel attacked by others	83	0	17	0	0	83	0	0	0	17
Suspect hidden motives in others	83	0	0	17	0	33	17	0	17	33
Am not in the mood for anything	50	17	17	17	0	67	17	17	0	0
Let myself be used	50	33	17	0	0	50	0	33	17	0
Am embarrassed to have people see my home	50	17	33	0	0	83	0	0	17	0
Withhold information from others	33	17	33	0	17	33	33	17	17	0
See events as unavoidable	50	0	33	17	0	33	17	33	17	0

10 SOUTH

Table 10.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	20	0	40	40	0
The conditions of my life are excellent	0	0	20	0	20	60	0
I am satisfied with my life	0	0	0	0	0	80	20
So far I have gotten the important things I want in life	0	0	0	0	40	40	20
If I could live my life over I would change almost nothing	0	0	0	0	40	60	0
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	33	33	33	0
The conditions of my life are excellent	0	0	0	33	33	33	0
I am satisfied with my life	0	0	0	33	33	0	33
So far I have gotten the important things I want in life	0	0	0	33	33	0	33
If I could live my life over I would change almost nothing	0	0	33	0	33	0	33

Table 10.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	0	20	40	40	0	33	33	33
+	AF	26. Annoyed	0	40	0	60	0	33	33	33
+	AF	27. Angry	0	20	0	80	0	0	33	67
+	AF	28. Irritated	0	20	0	80	0	0	33	67
+	AF	29. Grouchy	0	40	0	60	0	0	33	67
-	EA	7. Passive	20	40	40	0	0	67	33	0
-	EA	11. Sluggish	20	20	20	40	0	33	33	33
-	EA	19. Unenterprising	0	20	40	40	0	33	67	0
-	EA	24. Tired	20	40	40	0	0	67	33	0
+	EA	3. Energetic	60	20	20	0	0	100	0	0
+	EA	5. Alert	60	40	0	0	67	33	0	0
+	EA	16. Vigorous	20	20	60	0	0	67	0	33
+	EA	22. Active	60	0	40	0	0	67	33	0
-	HT	2. Dissatisfied	0	0	0	100	0	0	33	67
-	HT	12. Sorry	0	0	20	80	0	33	33	33
-	HT	14. Depressed	0	0	20	80	0	33	33	33
-	HT	20. Sad	0	0	0	100	0	33	0	67
+	HT	1. Happy	100	0	0	0	33	67	0	0
+	HT	8. Cheerful	80	20	0	0	33	67	0	0
+	HT	18. Satisfied	60	40	0	0	33	33	33	0
+	HT	23. Contented	60	40	0	0	33	67	0	0
-	TA	4. Relaxed	60	40	0	0	0	33	33	33
-	TA	13. Composed	40	20	20	20	0	67	33	0
-	TA	15. Restful	20	60	20	0	0	67	33	0
-	TA	21. Calm	20	80	0	0	33	33	0	33
+	TA	6. Nervous	0	60	0	40	0	33	67	0
+	TA	9. Tense	20	20	20	40	0	67	33	0
+	TA	10. Jittery	20	20	0	60	0	0	33	67
+	TA	17. Anxious	0	20	60	20	0	33	67	0

Table 10.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	20	0	0	80	0	0	0	33	67	0
Feel comfortable with myself	0	20	0	40	40	0	0	0	67	33
Adapt easily to new situations	0	20	0	40	40	0	0	33	67	0
Look at the bright side of life	0	0	0	100	0	0	0	33	33	33
Am sure of my ground	0	0	20	80	0	0	0	33	67	0
Often feel blue	80	20	0	0	0	33	33	33	0	0
Worry about things	0	20	0	60	20	0	67	0	33	0
Feel threatened easily	0	40	60	0	0	33	33	33	0	0
Dislike myself	60	0	40	0	0	33	33	33	0	0
Am filled with doubts about things	20	0	60	20	0	33	33	33	0	0
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	40	20	40	0	0	67	33	0	0	0
Feel that people have a hard time understanding me	40	0	60	0	0	0	33	67	0	0
Feel attacked by others	60	0	40	0	0	67	33	0	0	0
Suspect hidden motives in others	40	0	20	40	0	67	33	0	0	0
Am not in the mood for anything	80	0	0	20	0	33	33	33	0	0
Let myself be used	40	0	0	60	0	33	33	0	33	0
Am embarrassed to have people see my home	80	0	20	0	0	67	33	0	0	0
Withhold information from others	40	20	0	40	0	67	33	0	0	0
See events as unavoidable	60	0	40	0	0	33	0	67	0	0

11 WALES

Table 11.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	50	50	0
The conditions of my life are excellent	0	0	0	0	0	100	0
I am satisfied with my life	0	0	0	0	0	100	0
So far I have gotten the important things I want in life	0	0	0	0	0	100	0
If I could live my life over I would change almost nothing	0	0	50	0	0	50	0
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	33	67	0
The conditions of my life are excellent	0	0	0	0	33	67	0
I am satisfied with my life	0	0	0	0	67	33	0
So far I have gotten the important things I want in life	0	0	0	0	67	0	33
If I could live my life over I would change almost nothing	0	0	33	0	67	0	0

Table 11.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	50	0	50	0	0	67	33	0
+	AF	26. Annoyed	0	50	0	50	0	33	33	33
+	AF	27. Angry	0	50	0	50	0	0	33	67
+	AF	28. Irritated	0	50	0	50	33	0	33	33
+	AF	29. Grouchy	0	50	0	50	0	33	0	67
-	EA	7. Passive	0	0	50	50	0	0	67	33
-	EA	11. Sluggish	0	50	0	50	0	67	33	0
-	EA	19. Unenterprising	0	50	50	0	0	0	67	33
-	EA	24. Tired	0	50	0	50	33	33	33	0
+	EA	3. Energetic	50	50	0	0	0	33	67	0
+	EA	5. Alert	50	50	0	0	67	33	0	0
+	EA	16. Vigorous	0	50	0	50	0	33	33	33
+	EA	22. Active	50	50	0	0	0	33	67	0
-	HT	2. Dissatisfied	0	0	0	100	0	33	33	33
-	HT	12. Sorry	0	0	50	50	0	0	0	100
-	HT	14. Depressed	0	0	0	100	0	0	67	33
-	HT	20. Sad	0	0	50	50	0	0	67	33
+	HT	1. Happy	100	0	0	0	0	100	0	0
+	HT	8. Cheerful	50	50	0	0	0	67	33	0
+	HT	18. Satisfied	50	0	0	50	33	67	0	0
+	HT	23. Contented	50	0	50	0	0	100	0	0
-	TA	4. Relaxed	50	0	50	0	0	67	33	0
-	TA	13. Composed	0	50	50	0	67	0	33	0
-	TA	15. Restful	0	50	50	0	0	33	33	33
-	TA	21. Calm	0	50	50	0	0	100	0	0
+	TA	6. Nervous	0	50	50	0	0	0	33	67
+	TA	9. Tense	0	50	50	0	0	33	67	0
+	TA	10. Jittery	0	0	0	100	0	0	0	100
+	TA	17. Anxious	0	0	50	50	0	33	33	33

Table 11.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	0	0	0	100	0	0	67	0	33	0
Feel comfortable with myself	0	0	0	100	0	0	33	0	67	0
Adapt easily to new situations	0	0	0	100	0	0	0	33	33	33
Look at the bright side of life	0	0	0	100	0	0	0	33	33	33
Am sure of my ground	0	0	0	100	0	0	33	0	67	0
Often feel blue	0	100	0	0	0	0	67	0	33	0
Worry about things	0	0	50	50	0	0	33	0	33	33
Feel threatened easily	0	50	50	0	0	0	0	67	33	0
Dislike myself	0	50	50	0	0	33	33	33	0	0
Am filled with doubts about things	0	50	50	0	0	0	33	33	0	33
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	50	0	50	0	0	33	33	0	33	0
Feel that people have a hard time understanding me	50	0	50	0	0	0	33	33	33	0
Feel attacked by others	50	0	50	0	0	0	67	0	33	0
Suspect hidden motives in others	50	0	50	0	0	67	0	33	0	0
Am not in the mood for anything	50	0	50	0	0	33	33	0	33	0
Let myself be used	50	50	0	0	0	33	33	0	33	0
Am embarrassed to have people see my home	50	50	0	0	0	100	0	0	0	0
Withhold information from others	50	50	0	0	0	33	67	0	0	0
See events as unavoidable	50	0	50	0	0	67	33	0	0	0

Table 12.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	100	0	0
The conditions of my life are excellent	0	0	0	0	0	100	0
I am satisfied with my life	0	0	0	0	0	100	0
So far I have gotten the important things I want in life	0	0	0	0	0	100	0
If I could live my life over I would change almost nothing	0	0	0	0	100	0	0
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	13	0	25	0	25	13	25
The conditions of my life are excellent	13	0	13	25	0	25	25
I am satisfied with my life	13	0	13	25	0	25	25
So far I have gotten the important things I want in life	0	25	0	25	0	13	38
If I could live my life over I would change almost nothing	13	25	0	13	0	13	38

Table 12.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	0	100	0	0	13	38	25	25
+	AF	26. Annoyed	0	0	0	100	0	38	13	50
+	AF	27. Angry	0	0	0	100	0	25	13	63
+	AF	28. Irritated	0	0	0	100	0	38	13	50
+	AF	29. Grouchy	0	0	0	100	0	38	13	50
-	EA	7. Passive	0	0	100	0	13	38	38	13
-	EA	11. Sluggish	0	0	0	100	13	25	38	25
-	EA	19. Unenterprising	0	0	100	0	0	13	13	75
-	EA	24. Tired	0	0	100	0	38	25	0	38
+	EA	3. Energetic	0	100	0	0	13	38	38	13
+	EA	5. Alert	0	100	0	0	38	63	0	0
+	EA	16. Vigorous	0	100	0	0	0	63	25	13
+	EA	22. Active	100	0	0	0	13	88	0	0
-	HT	2. Dissatisfied	0	0	0	100	25	50	13	13
-	HT	12. Sorry	0	0	0	100	13	13	25	50
-	HT	14. Depressed	0	0	0	100	0	38	25	38
-	HT	20. Sad	0	0	0	100	0	50	0	50
+	HT	1. Happy	100	0	0	0	38	63	0	0
+	HT	8. Cheerful	—	—	—	—	38	63	0	0
+	HT	18. Satisfied	0	100	0	0	38	38	13	13
+	HT	23. Contented	100	0	0	0	25	63	0	13
-	TA	4. Relaxed	100	0	0	0	25	25	38	13
-	TA	13. Composed	100	0	0	0	50	50	0	0
-	TA	15. Restful	0	100	0	0	25	38	25	13
-	TA	21. Calm	100	0	0	0	13	75	13	0
+	TA	6. Nervous	—	—	—	—	13	63	0	25
+	TA	9. Tense	100	0	0	0	25	38	0	38
+	TA	10. Jittery	0	0	0	100	13	25	0	63
+	TA	17. Anxious	0	0	0	100	13	38	38	13

Table 12.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	0	0	0	100	0	13	0	38	38	13
Feel comfortable with myself	0	0	100	0	0	25	0	13	25	38
Adapt easily to new situations	0	0	0	100	0	13	25	0	13	50
Look at the bright side of life	0	0	0	100	0	13	25	13	13	38
Am sure of my ground	0	0	100	0	0	0	38	0	25	38
Often feel blue	0	0	100	0	0	25	25	0	50	0
Worry about things	0	0	0	100	0	0	25	13	38	25
Feel threatened easily	100	0	0	0	0	25	38	13	0	25
Dislike myself	0	100	0	0	0	38	13	25	13	13
Am filled with doubts about things	0	100	0	0	0	38	25	13	0	25
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	100	0	0	0	0	50	0	38	13	0
Feel that people have a hard time understanding me	0	100	0	0	0	50	0	38	13	0
Feel attacked by others	0	100	0	0	0	63	13	13	0	13
Suspect hidden motives in others	0	100	0	0	0	75	0	0	13	13
Am not in the mood for anything	0	100	0	0	0	25	38	13	25	0
Let myself be used	100	0	0	0	0	50	0	13	25	13
Am embarrassed to have people see my home	100	0	0	0	0	63	13	0	25	0
Withhold information from others	100	0	0	0	0	13	25	25	38	0
See events as unavoidable	100	0	0	0	0	38	25	13	25	0

Table 13.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	10	20	20	50
The conditions of my life are excellent	0	0	10	0	0	20	70
I am satisfied with my life	0	0	0	0	10	40	50
So far I have gotten the important things I want in life	0	0	10	10	20	20	40
If I could live my life over I would change almost nothing	0	0	10	30	20	20	20
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	17	0	17	50	17
The conditions of my life are excellent	0	17	0	0	17	67	0
I am satisfied with my life	0	0	0	0	33	67	0
So far I have gotten the important things I want in life	0	0	0	0	33	33	33
If I could live my life over I would change almost nothing	17	0	33	0	17	17	17

Table 13.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	0	44	11	44	17	33	33	17
+	AF	26. Annoyed	0	11	44	44	0	17	17	67
+	AF	27. Angry	0	11	22	67	0	17	0	83
+	AF	28. Irritated	0	22	22	56	0	33	17	50
+	AF	29. Grouchy	0	22	11	67	17	17	33	33
-	EA	7. Passive	13	50	13	25	0	33	17	50
-	EA	11. Sluggish	11	33	11	44	0	17	50	33
-	EA	19. Unenterprising	0	44	33	22	17	17	33	33
-	EA	24. Tired	0	78	11	11	0	67	17	17
+	EA	3. Energetic	22	78	0	0	17	50	17	17
+	EA	5. Alert	67	33	0	0	67	17	17	0
+	EA	16. Vigorous	22	56	11	11	0	33	67	0
+	EA	22. Active	56	44	0	0	33	50	0	17
-	HT	2. Dissatisfied	0	13	25	63	17	50	17	17
-	HT	12. Sorry	0	11	11	78	0	0	17	83
-	HT	14. Depressed	0	0	0	100	0	33	17	50
-	HT	20. Sad	0	11	11	78	0	33	17	50
+	HT	1. Happy	89	11	0	0	67	17	17	0
+	HT	8. Cheerful	78	22	0	0	67	33	0	0
+	HT	18. Satisfied	89	11	0	0	17	67	17	0
+	HT	23. Contented	89	11	0	0	17	67	17	0
-	TA	4. Relaxed	67	22	11	0	50	33	17	0
-	TA	13. Composed	44	56	0	0	17	83	0	0
-	TA	15. Restful	33	56	0	11	17	33	33	17
-	TA	21. Calm	78	22	0	0	33	50	17	0
+	TA	6. Nervous	0	44	22	33	0	33	17	50
+	TA	9. Tense	0	22	33	44	0	33	50	17
+	TA	10. Jittery	0	11	33	56	0	17	17	67
+	TA	17. Anxious	0	22	22	56	0	33	50	17

Table 13.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	10	10	10	40	30	0	33	17	17	33
Feel comfortable with myself	0	10	20	0	70	0	17	0	50	33
Adapt easily to new situations	0	20	0	30	50	17	0	33	33	17
Look at the bright side of life	0	0	10	40	50	0	17	17	50	17
Am sure of my ground	0	0	20	10	70	0	33	17	33	17
Often feel blue	50	40	0	10	0	33	33	0	33	0
Worry about things	30	20	10	40	0	0	33	17	50	0
Feel threatened easily	50	10	20	20	0	0	83	0	17	0
Dislike myself	70	20	0	0	10	50	17	0	33	0
Am filled with doubts about things	40	20	20	20	0	33	17	0	33	17
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	80	0	10	10	0	33	0	33	33	0
Feel that people have a hard time understanding me	22	44	11	11	11	17	33	17	33	0
Feel attacked by others	70	20	10	0	0	67	17	0	17	0
Suspect hidden motives in others	40	20	30	10	0	33	33	17	17	0
Am not in the mood for anything	78	11	11	0	0	50	17	17	17	0
Let myself be used	60	40	0	0	0	33	33	17	17	0
Am embarrassed to have people see my home	90	0	10	0	0	33	17	33	17	0
Withhold information from others	20	30	30	0	20	33	17	17	33	0
See events as unavoidable	33	11	33	0	22	17	17	33	33	0

Table 14.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	25	0	75	0
The conditions of my life are excellent	0	0	0	25	0	75	0
I am satisfied with my life	0	0	0	25	0	50	25
So far I have gotten the important things I want in life	0	0	0	25	0	75	0
If I could live my life over I would change almost nothing	0	0	0	25	0	25	50
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	50	50	0
The conditions of my life are excellent	0	0	0	0	0	100	0
I am satisfied with my life	0	0	0	0	0	100	0
So far I have gotten the important things I want in life	0	0	0	0	0	100	0
If I could live my life over I would change almost nothing	0	0	50	0	50	0	0

Table 14.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	0	25	0	75	50	0	0	50
+	AF	26. Annoyed	0	25	0	75	50	0	0	50
+	AF	27. Angry	0	25	0	75	50	0	0	50
+	AF	28. Irritated	0	25	0	75	50	0	0	50
+	AF	29. Grouchy	0	25	0	75	50	0	0	50
-	EA	7. Passive	25	25	0	50	50	0	50	0
-	EA	11. Sluggish	0	25	25	50	50	0	50	0
-	EA	19. Unenterprising	0	50	25	25	0	0	50	50
-	EA	24. Tired	0	50	0	50	50	0	0	50
+	EA	3. Energetic	50	50	0	0	0	50	0	50
+	EA	5. Alert	50	50	0	0	0	0	50	50
+	EA	16. Vigorous	0	67	0	33	0	0	0	100
+	EA	22. Active	25	50	0	25	0	50	0	50
-	HT	2. Dissatisfied	0	0	0	100	50	0	0	50
-	HT	12. Sorry	0	0	0	100	0	50	0	50
-	HT	14. Depressed	0	0	0	100	50	0	0	50
-	HT	20. Sad	0	0	0	100	0	50	0	50
+	HT	1. Happy	100	0	0	0	0	100	0	0
+	HT	8. Cheerful	100	0	0	0	0	100	0	0
+	HT	18. Satisfied	100	0	0	0	0	100	0	0
+	HT	23. Contented	100	0	0	0	0	50	50	0
-	TA	4. Relaxed	100	0	0	0	0	0	50	50
-	TA	13. Composed	33	67	0	0	50	0	0	50
-	TA	15. Restful	75	0	25	0	0	50	0	50
-	TA	21. Calm	75	25	0	0	50	0	50	0
+	TA	6. Nervous	0	0	0	100	0	0	50	50
+	TA	9. Tense	0	0	25	75	50	0	50	0
+	TA	10. Jittery	0	0	0	100	0	0	50	50
+	TA	17. Anxious	0	33	0	67	0	50	50	0

Table 14.3 IPIP Happiness and Satisfaction items and response percentages

IPIP Happiness										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Seldom feel blue	25	25	0	50	0	0	50	0	50	0
Feel comfortable with myself	25	0	25	25	25	0	0	0	100	0
Adapt easily to new situations	25	0	0	50	25	0	0	0	0	100
Look at the bright side of life	25	0	25	50	0	0	0	100	0	0
Am sure of my ground	0	25	0	75	0	0	0	50	50	0
Often feel blue	25	50	0	25	0	50	50	0	0	0
Worry about things	0	25	25	50	0	0	0	0	50	50
Feel threatened easily	0	75	25	0	0	50	0	0	50	0
Dislike myself	75	25	0	0	0	0	50	50	0	0
Am filled with doubts about things	50	50	0	0	0	0	100	0	0	0
IPIP Satisfaction										
	Winners					Comparison group				
	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
Feel short-changed in life	100	0	0	0	0	0	0	50	50	0
Feel that people have a hard time understanding me	50	0	50	0	0	50	0	0	50	0
Feel attacked by others	50	25	25	0	0	50	0	50	0	0
Suspect hidden motives in others	25	25	50	0	0	50	0	0	50	0
Am not in the mood for anything	100	0	0	0	0	50	50	0	0	0
Let myself be used	75	25	0	0	0	50	0	50	0	0
Am embarrassed to have people see my home	75	25	0	0	0	0	0	50	50	0
Withhold information from others	75	0	0	25	0	50	50	0	0	0
See events as unavoidable	75	0	0	25	0	50	50	0	0	0

Table 15.1 Satisfaction with life items and response percentages

Winners							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	0	0	67	33
The conditions of my life are excellent	0	0	33	0	0	33	33
I am satisfied with my life	0	0	0	0	25	50	25
So far I have gotten the important things I want in life	0	0	0	0	0	67	33
If I could live my life over I would change almost nothing	0	0	0	0	0	100	0
Comparison group							
	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly Agree
In most ways my life is close to ideal	0	0	0	13	25	63	0
The conditions of my life are excellent	0	0	0	13	25	50	13
I am satisfied with my life	0	0	25	0	13	50	13
So far I have gotten the important things I want in life	0	0	0	0	13	50	38
If I could live my life over I would change almost nothing	13	0	0	13	50	25	0

Table 15.2 UWIST Mood Adjective Checklist items and response percentages

Positive or negative keyed	Factor	Adjective	Winners				Comparison group			
			Definitely	Slightly	Slightly not	Definitely not	Definitely	Slightly	Slightly not	Definitely not
+	AF	25. Impatient	0	33	33	33	0	63	25	13
+	AF	26. Annoyed	0	0	33	67	0	0	38	63
+	AF	27. Angry	0	0	33	67	0	0	13	88
+	AF	28. Irritated	0	0	33	67	0	0	13	88
+	AF	29. Grouchy	0	0	33	67	0	13	13	75
-	EA	7. Passive	0	0	33	67	0	38	38	25
-	EA	11. Sluggish	0	0	33	67	0	25	38	38
-	EA	19. Unenterprising	0	0	0	100	13	13	25	50
-	EA	24. Tired	0	33	33	33	25	50	13	13
+	EA	3. Energetic	0	100	0	0	13	50	38	0
+	EA	5. Alert	67	33	0	0	75	13	13	0
+	EA	16. Vigorous	67	0	33	0	0	13	50	38
+	EA	22. Active	67	33	0	0	25	38	38	0
-	HT	2. Dissatisfied	0	0	33	67	0	50	38	13
-	HT	12. Sorry	0	0	0	100	0	0	25	75
-	HT	14. Depressed	0	33	0	67	0	0	25	75
-	HT	20. Sad	0	0	0	100	0	0	13	88
+	HT	1. Happy	100	0	0	0	38	63	0	0
+	HT	8. Cheerful	67	33	0	0	50	50	0	0
+	HT	18. Satisfied	100	0	0	0	50	50	0	0
+	HT	23. Contented	100	0	0	0	50	50	0	0
-	TA	4. Relaxed	33	67	0	0	13	75	13	0
-	TA	13. Composed	67	33	0	0	63	38	0	0
-	TA	15. Restful	33	67	0	0	0	75	25	0
-	TA	21. Calm	33	33	33	0	25	75	0	0
+	TA	6. Nervous	0	67	0	33	0	25	13	63
+	TA	9. Tense	0	67	0	33	0	63	0	38
+	TA	10. Jittery	0	33	33	33	0	25	13	63
+	TA	17. Anxious	0	0	67	33	0	38	0	63