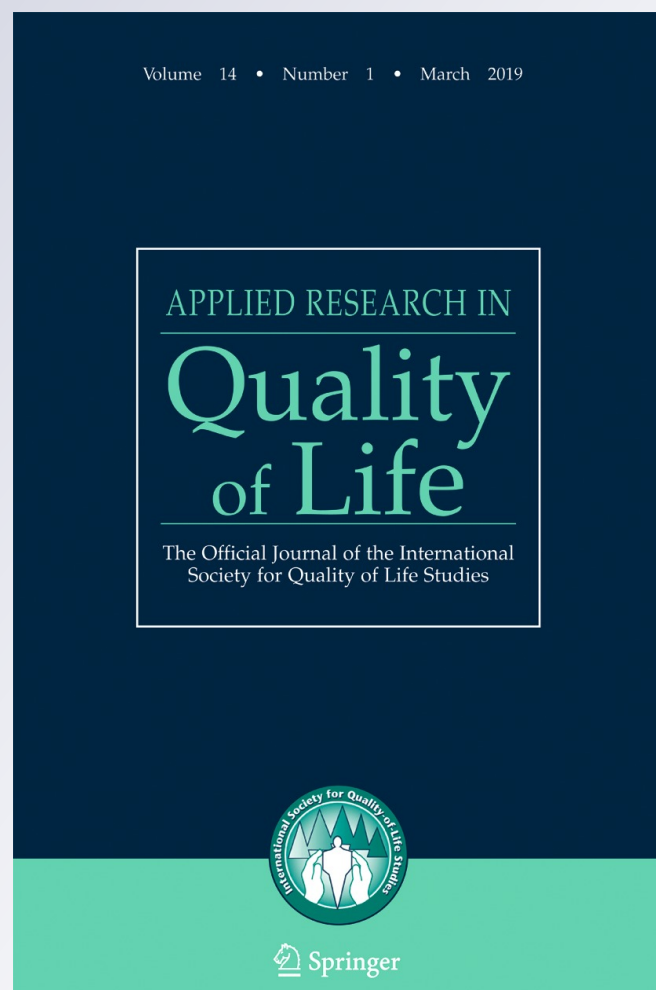# Comparing the Anamnestic Comparative Self-Assessment (ACSA) to a Conventional Happiness Question Without Anchoring

Elsy Verhofstadt, Brent Bleys & Luc Van Ootegem

Volume 14 • Number 1 • March 2019

APPLIED RESEARCH IN
Quality
of Life

The Official Journal of the International
Society for Quality of Life Studies

Springer

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Comparing the Anamnestic Comparative Self-Assessment (ACSA) to a Conventional Happiness Question Without Anchoring

Elsy Verhofstadt[1] · **Brent Bleys**[2] ·
Luc Van Ootegem[1,3]

Abstract The Anamnestic Comparative Self-Assessment (ACSA) uses a self-anchoring rating scale to measure subjective well-being. Because of its internal frame of reference, ACSA is argued to be less influenced by cultural relativities and psychological traits. We collect survey data in Flanders that contain both a conventional happiness question (CQ) and ACSA. It is the first time that ACSA data are collected in a developed country outside of a clinical setting. In line with previous research, we find that the mean score for ACSA is significantly lower than the mean CQ score and that both scores are positively correlated. Social life (family, relationships, and friends) is cited most when self-anchoring the best period in life, whereas health issues and personal events are most often linked to the worst period in life. These findings add to the idea that the anchors of the ACSA scale are universal. In a simple model, we find that ACSA is determined by two variables that can change over time: being employed and being in a relation. In an extended model, however, ACSA's insensitivity

✉ Elsy Verhofstadt
 elsy.verhofstadt@UGent.be

 Brent Bleys
 brent.bleys@UGent.be

 Luc Van Ootegem
 luc.vanootegem@UGent.be

[1] Sherppa, Faculty of Economics and Business Administration, Ghent University, Sint Pietersplein 6, 9000 Ghent, Belgium

[2] Department of General Economics, Faculty of Economics and Business Administration, Ghent University, Tweekerkenstraat 2, 9000 Ghent, Belgium

[3] Research Institute for Work and Society (HIVA), KULeuven, Leuven, Belgium

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to socio-demographic variables that are not amenable to change no longer holds and personality traits become important.

Introduction

Well-being is a multi-dimensional construct that can be defined and measured differently, depending on the purpose at hand. Measures of well-being mostly make use of either subjective or objective information on a range of different dimensions of life (Stiglitz et al. 2009; OECD 2011). Sometimes both types of information are combined into one single index. In surveys, questions concerning respondents' general satisfaction with life or level of happiness are often taken as a proxy for individual well-being. Life satisfaction and happiness data are then used to compare individuals or groups and explore key determinants of well-being in a cross-sectional setting or to monitor changes in individual levels of well-being with longitudinal data. However, as respondents might use different reference frames when providing life satisfaction or happiness scores—i.e., they might compare themselves to different standards or to different peer groups (Michalos 1985; Dolan and White 2006)—it is difficult if not impossible to compare happiness ratings between different respondents (Diener and Diener 1995). Verhofstadt et al. (2015), for instance, examined the impact of different frames of reference induced by questions on happiness and found both quantitative and qualitative differences between different happiness measures with different reference frames. Conventional happiness measures that did not specify a frame of reference were found to be more influenced by personality traits than measures that did indicate one. Applying an internal frame of reference in the happiness question (e.g., making a comparison with other moments in the respondents' lives) elicited responses that were more determined by variables related to life experiences such as being in a relationship. Using an external frame of reference, such as comparing oneself to others, produced happiness responses that were more predicted by living conditions and materialistic variables (e.g., income).

In this paper, we focus on the Anamnestic Comparative Self-Assessment (ACSA) scale, a self-anchoring rating scale for subjective well-being that was originally developed by Bernheim (1983) to measure the quality of life of cancer patients. In the ACSA procedure, respondents are first asked to define or describe the best and worst periods in their lives and then compare to these extremes their current quality of life. As ACSA uses the respondents' best and worst periods as anchor points in the quality-of-life measures, its frame of reference is internal. Bernheim (1999), Bernheim et al. (2006), and Theuns et al. (2014) list several advantages of ACSA compared to conventional quality-of-life measures. First, ACSA is argued to discourage socially desirable or casual responses and thus reduce the relativity of responses (Bernheim 1999). Next, as ACSA's anchor points related to the respondents' personal lives are regarded as universal, ACSA scores are believed to be less influenced by cultural relativities (Bernheim 1999; Theuns et al. 2014). Finally, due to ACSA's relative insensitivity to socio-demographic variables, its scores may also be less influenced by psychological traits, as these are likely to have a similar influence on both the anchor points and the ratings (Bernheim et al. 2006).

After the pilot study of Bernheim and Buyse (1984), among 65 cancer patients, ACSA data have only been collected in three more studies. Two of these were carried out in a clinical setting. Bernheim et al. (2006) gathered quality-of-life data using both ACSA and a conventional question for 2548 university-hospital patients in Germany suffering from a wide range of psychiatric and somatic diseases. Møller et al. (2008) compiled similar data for 46 respondents, comparing 26 healthy persons to 20 tuberculosis patients in South Africa. The third study that uses ACSA to measure quality of life was carried out in a South African township in the Eastern Cape Province where Møller and Theuns (2013) collected a sample of ACSA data for 1020 township dwellers. In all studies, the authors explored the content of the self-defined anchor points and the differences between ACSA scores and scores on a conventional happiness question (CQ) capturing quality of life without a frame of reference. In addition, the related determinants of both constructs were examined.

Regarding the self-reported anchor points in ACSA, Bernheim et al. (2006) reported that German respondents typically assigned the label "best period in life" to love, the birth of a child or a professional achievement, while the "worst period in life" was usually related to a serious disease or the loss of a loved one. Møller et al. (2008) discovered similar anchor points for South Africans, arguing that the characteristics of these best and worst periods may be universal. Møller and Theuns (2013) found that most of the anchors reported by South-African township dwellers were also related to the self, to family life and to material living standards—e.g. income, financial security and housing. They also revealed that age, gender, education and self-reported health were associated with the choice of the selected anchors.

ACSA scores and CQ scores were found to be significantly positively correlated in all studies, with correlation coefficients ranging from .433 (in Møller and Theuns 2013) to .67 (in Møller et al. 2008). ACSA scores were significantly lower than CQ scores in both Bernheim et al. (2006) and Møller et al. (2008).[1] Bernheim et al. (2006) also observed a significantly higher variance for the ACSA scores than the CQ scores and revealed a clear positive skew for the ACSA scores whereas the CQ scores were distributed almost symmetrically.

Moreover, these studies demonstrated that CQ and ACSA have different determinants. Bernheim et al. (2006) revealed that a number of socio-demographic variables had small but significant effects on CQ scores, but not on ACSA scores. Age, being female, unemployed, or divorced or having lost one's partner were all negatively associated with CQ, whereas only being unemployed was negatively associated with ACSA. The authors argued that this might be because ACSA uses a self-anchoring scale, reducing the significance of socio-demographic variables that are not amenable to change (e.g., age, gender). After all, being unemployed—the only socio-demographic variable that was found to be associated with ACSA—may change over time. Møller et al. (2008) did not find any significant differences between ACSA and CQ scores in terms of age and gender, yet it should be noted that the sample size of this study was small. However, the authors did observe that ACSA differentiated better between the healthy respondents and the patient group. Møller and Theuns (2013) revealed that both were significantly positively associated with being married, higher educational levels, a higher income, better living conditions and church attendance and

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[1] Møller and Theuns (2013) did not report on this.

that they were negatively associated with being unemployed. The positive associations with marital status and education were stronger for CQ than for ACSA, while CQ was additionally positively associated with being a born-again Christian and having access to government-subsidized housing and negatively associated with criminal victimization.

In this paper, we gather data on subjective well-being using both a CQ and ACSA's self-anchoring rating scale for a representative sample of the population in Flanders, the northern, Dutch-speaking part of Belgium. It is the first time that ACSA data are collected in a developed country outside of a clinical setting. This allows us to assess whether the abovementioned advantages of ACSA can be confirmed in a more general setting. Specifically, we aim to verify (a) whether the anchor points of the ACSA scale can be regarded as universal, (b) to what extent ACSA and CQ scores are quantitatively different (or not), and (c) whether Bernheim et al.'s (2006) assumption holds that personality traits are less important in explaining differences in ACSA scores than in CQ scores.

Data and Methodology

Sample

Our study draws on self-reported information obtained from a large-scale survey (LEVO, $N = 1773$) held in Flanders in 2014 using quota sampling.[2] The questionnaires were filled in by the respondents themselves (on paper or digitally). As 13 respondents did not respond to either one of both happiness questions used in this study, we restricted the sample to 1760 individuals. In the sample, participants were weighted to achieve similarity to the (univariate) frequency distributions in the Flemish population for the variables life situation, gender and age. The weighted sample, for which $N = 1376$,[3] consisted of 49% male and 51% female respondents, with an average of 49.7 years. In terms of life situation, the majority of the weighted sample was working (41% full-time and 13.5% part-time) or was a pensioner (27%). Students (5.8%), househusbands/wives (4.7%), unemployed (4.1%), and those unable to work (3.8%) are smaller groups. About one third of the respondents obtained a higher secondary degree, the other two thirds obtained a lower (i.e., did not complete secondary education) and a higher (i.e., a bachelor or master) degree, respectively.

Questionnaire

The LEVO survey (2014) included two questions on happiness. The first one was a CQ without a frame of reference:

How happy were you in the past two weeks?

Answers could range from − 5 ("very unhappy") to +5 ("very happy"), with zero in the middle.

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[2] The survey was called LEVO (edition 2014), which is short for "*LEvensomstandigheden in Vlaanderen Onderzocht*" and can be translated as "Inquiry into the life circumstances in Flanders".
[3] As the maximum weight was 1, the weighted sample consisted of a lower number than the original sample. Rescaling the weights to obtain the same number of respondents as in the original sample would not alter the results.

The second happiness question in LEVO used an internal frame of reference in which the anchor points are defined by the respondents. The multiple-choice format was used for the self-anchoring procedure for ACSA, as suggested in the Encyclopedia of Quality of Life and Well-Being Research (Theuns et al. 2014, pp. 166–169):

All people experience good and bad times in their lives. Think about the best period and the worst period in your life. This can be a longer period in (can be several months of) your life. What was the best period in your life? When you experienced your happiest period, which were the contributing factors, you can select several reasons.

□ Relationships	□ Family
□ Friends	□ Studies
□ Work	□ Health
□ Security or safety	□ Money
□ Legal issues	□ Achievements[4]
□ Personal event	□ Historical event
□ Natural event	□ Other: ….

How long did this period last? About ……... months. What was your age at that time? …….. years old.

Next, the same questions were asked for the worst period in life. The list of contributing factors here was identical to the one for the best period in life.

Finally, respondents were asked to rate their happiness level using the following scale (ACSA):

If +5 means "as good as the best period in your life" and -5 means "as bad as the worst period in your life", please indicate how you felt in the past two weeks.

We used the -5 to $+5$ scale, as suggested for cross-sectional research by Theuns et al. (2014). The list of possible contributing factors was suggested by the same authors, in line with previous research using open-ended questions (Møller and Theuns 2013), which proved to be more difficult. The number of contributing factors was limited to 13 by Theuns et al. (2014). This list made it possible to accommodate all the detailed descriptions from the open-ended questions without making it too overwhelming for respondents. In our survey, we allowed for respondents to provide other, more detailed anchor descriptions. All answers ($N = 60$) within this "other" category could be (and have been) recoded to the existing categories.

The LEVO survey included questions on the respondents' gender, age, education level, relationship and life situation (i.e., employed, unemployed, student, pensioner, person unable to work, and househusband/wife). The LEVO (2014) respondents were subsequently asked to rate themselves on the HEXACO personality traits: Honesty,

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[4] In Dutch, we used the word "*prestaties*", which was translated into "achievements" and "failures" for the best and worst period, respectively.

Emotionality, eXtraversion, Agreeableness, Conscientiousness and Openness to expe-
rience (De Raad and Doddema-Winsemius 2006). The main difference with the Big
Five personality traits is the addition of "Honesty," which relates to personal integrity
(De Vries et al. 2009).

Analysis

To tackle the research question whether the anchor points of the ACSA scale are
universal, we will first provide descriptive statistics about the different anchor points
and verify whether they are in line with previous ACSA studies. Secondly, we will
compare the distribution of ACSA and CQ ratings to know whether both concepts are
quantitatively different or not. Finally, we will present multivariate models to explore
the determinants of both constructs. Two regression models will be specified: one based
on the simple model used by Bernheim et al. (2006) and one that also includes
personality traits and a more detailed description of the respondents' life situation.
The former will allow us to assess to what extent the results of Bernheim et al. (2006)
are found outside of a clinical setting. The latter will allow us to directly verify
Bernheim et al.'s (2006) assertion that ACSA may be less sensitive to personality
traits, as socio-demographic variables were found to be less important in the ACSA
model than in the CQ model. For ease of interpretation and comparison, linear
regression results will be presented.[5]

Results

Anchor Points

Table 1 presents the contributing factors that the respondents used to describe their best
and worst periods in life. Note that the respondents could select more than one option in
each period. In general, we find that people assign more factors to the best period in life
than to the worst—on average 3.62 and 1.98 factors, respectively. One explanation for
this is that two thirds of those who see relationships as a factor in their best period at the
same time also mention family life, while this combination is only mentioned by 26%
of the respondents for the worst period. The respondents' social life (i.e., their family,
relationships and friends) is cited most for best period in life, whereas health issues and
personal events are the most prevalent factors assigned to the worst period. Our
findings are in line with other ACSA studies that have been carried out in different
settings (i.e., clinical and non-clinical) and different countries (i.e., developed and
developing countries), as described above. We can conclude that our results confirm
Bernheim et al.'s (2006) hypothesis that the ACSA anchors are universal.

Møller and Theuns (2013) compare the anchor points supplied by respondents aged
30 years or younger to those of older respondents and found that the former provided the
majority of the achievement and failure anchors. Table 1 shows the contributing factors

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[5] Van Praag and Ferrer-i-Carbonell (2010) studied the impact of the estimation method used in happiness
regressions and concluded "that we do not have to be very anxious on which particular estimation method is
used" (p.15).

Table 1 Percentage of respondents that indicated the factor as contributing to the best or worst period in life (in general and for younger (under 30 years) and older people (over 60 years))

Factor	Best period				Worst period			
	All	Max 30	60+	Sign	All	Max 30	60+	Sign
Family	66.1	59.5	70.8	.003	27.5	27.5	27.8	.907
Relationships	63.2	66.9	56.9	.011	27.3	31.0	24.2	.058
Friends	44.6	57.4	35.8	.000	8.6	14.6	4.3	.000
Health	39.5	32.3	47.1	.000	35.3	28.0	45.6	.000
Money	31.8	33.7	32.3	.733	18.3	22.4	18.0	.162
Personal events	29.1	29.1	28.8	.966	29.7	27.2	29.2	.580
Work	27.1	20.9	28.5	.031	15.7	16.8	9.4	.006
Achievements	22.6	26.8	22.0	.157	10.0	12.5	9.4	.212
Security or safety	13.2	10.9	15.3	.111	6.0	6.9	4.6	.225
Studies	12.5	25.6	7.1	.000	8.4	20.8	4.3	.000
Historical events	5.6	7.4	5.4	.291	2.5	3.9	3.7	.890
Legal issues	4.4	10.5	2.3	.000	8.6	12.2	5.6	.004
Natural events	2.4	1.3	2.0	.586	1.6	1.4	2.6	.318

for those aged 30 years or younger (20.4% of the sample) and for those older than 60 (25.5%). The significance of the differences between the two age groups is examined using Chi-square tests. It is shown that achievements are indeed more important for young people, although the difference is not significant. For the best period in life, relationships and friends are more meaningful for younger people, while older people seem to attach more importance to family. Health is mentioned more by older respondents, while young people mention their studies more. Work is more relevant for the best period in older people's lives and for the worst period in younger people's lives.

Most respondents experienced their best period in life between the ages of 18 and 30 (see Fig. 1), whereas the worst periods in life are spread across a lifetime. As health issues are most often related to the worst period in life, this does not come as a surprise. On average, the best period in life lasts 3.5 years, whereas the worst period lasts 1.5 years (see Table 2). This can be related to the fact that the best period in life is typically linked to the joy of getting children or starting a significant relationship. Previous ACSA studies did not investigate the length of the anchor period or the respondents' age at the time.

Finally, we need to explore the impact of the cited anchor points for the best and worst periods in the respondents' lives on their ACSA scores. We do this for those anchors that are considered the main drivers of well-being. Key factors for subjective well-being are: income, education, work, family life, social capital, and health (see Stiglitz et al. 2009 and Helliwell et al. 2012 among others). It appears that respondents who named "health" as an anchor point for their best period in life report significantly higher ACSA scores than those who did not (respective means = 1.974 vs 1.690; t $(1374) = 2.500$, $p = 0.013$). Conversely, respondents who mentioned "health" as an anchor for their worst period in life reported significantly lower ACSA scores than those who did not (respective means = 1.566 vs 1.931; $t (1374) = -3.154$, $p = 0.002$).
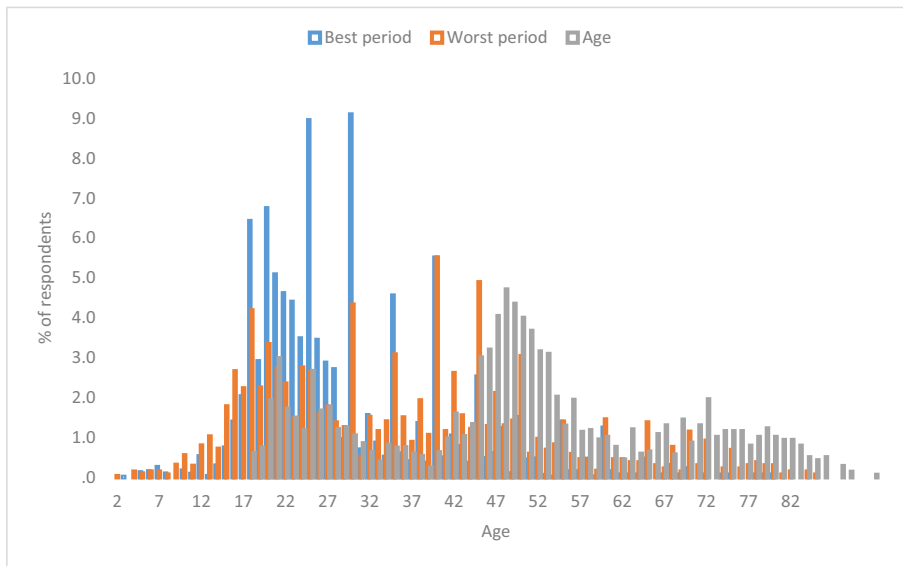
Fig. 1 Age distribution of actual age and of best/worst periods in life

For the anchors "family, relationships, friends, money, work, and studies" the ACSA scores were not found to be significantly different.

Comparative Distribution of ACSA and CQ Ratings

Comparing ACSA and CQ scores and distributions, we find that the mean score for ACSA is significantly lower than the mean CQ score 1.802 (SD = 2.06) compared to 2.299 (SD = 1.88) (t (1374) = 10.236; $p < 0.001$). The distributions of both scores are given in Fig. 2, indicating that the distribution of the ACSA scores is somewhat flatter than that of the CQ scores. Both distributions are skewed toward high ratings. The negative skew in our healthy respondent sample is stronger with −0.98 (SE = 0.07) for CQ than with −0.80 (SE = 0.07) for ACSA, whereas in the diseased respondents sample studied by Bernheim et al. (2006), the stronger skew with ACSA was toward lower ratings.

ACSA and CQ scores are positively correlated ($r = 0.59$; $p < 0.001$). This is in line with previous research: Bernheim et al. (2006), for example, report a correlation coefficient of 0.50 between ACSA and CQ scores for German hospital patients.

Determinants of ACSA and CQ Ratings

The first model presented here resembles Bernheim et al.'s (2006) model and includes the following determinants of happiness:

- gender (dummy for females, males being the reference category)
- age and age squared[6]

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[6] Age squared is included to allow for the possibility that the course of happiness is U-shaped over the life cycle, as is often reported in recent happiness studies—see, for example, Blanchflower and Oswald (2008). This squared term was not included in Bernheim et al. (2006).

Table 2 Duration of best and worst periods (in months)

	N	Minimum	Maximum	Mean	SD		
Duration best period	1212	0.25	840	43.36	92.46		
Duration worst period	1267	0.25	560	17.91	34.84		
	Percentiles						
	5	10	25	50	75	90	95
Duration best period	2.0	3.0	6.0	12.0	36.0	100.0	175.6
Duration worst period	1.0	2.0	4.0	10.0	20.3	36.0	60.0

- two dummies for educational level: lower educated (i.e., higher secondary education not completed) and higher educated (i.e., bachelor degree or higher), the reference category being higher secondary education
- a dummy for employment, the reference category being non-employed (i.e., student, pensioner, unemployed, person unable to work or househusband/wife)
- a dummy for relationship, the reference category being a respondent who is not in a relationship

The results of this regression analysis are presented in Table 3. We find that gender, age, age squared, and being in a relationship are related to CQ. Being male and being in a relationship are associated with higher levels of happiness as measured through CQ, whereas the relation between age and happiness is described through a U-shaped function,[7] as is illustrated in Fig. 3. Figure 3 presents the happiness levels according to age for a woman who has completed higher secondary education, is not employed and is in a relationship (based on the regression of Table 3). ACSA, on the other hand, is only determined by the dummies for employment and being in a relationship: being employed and being in a relationship is associated with higher ACSA scores. These results are in line with Bernheim et al. (2006), except for two findings: being employed was not only associated with higher ACSA scores but also with higher CQ scores, whereas being in a relationship was not associated with higher ACSA scores. We thus find further evidence that socio-demographic variables that are not amenable to change, such as gender and age, are less important predictors of ACSA ratings. This indicates that the effects of these variables are likely to be considered in the ACSA anchors. We find that ACSA is determined by the two variables in the model that can be regarded as "states" that can change over time. In general, we can conclude that ACSA is a meaningful scale to use, also outside a clinical setting.

The second model presented in Table 4 extends the first in two important ways. First, it includes more detailed information on our respondents' socio-economic situation. Instead of having only one dummy for being employed versus being non-employed, the model uses "being employed" as the reference category for a comparison to five other socio-economic situations: students, pensioners, the unemployed, people incapable of working and househusbands/wives. Second, the respondents' scores on the HEXACO personality traits are added, to verify Bernheim et al.'s (2006) claim that ACSA's insensitivity to socio-demographic variables raises "the

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[7] When age square is not included in the models as in Bernheim et al. (2006), age is not significant in the CQ model (and it is still not significant in the ACSA model). The other results remain identical.
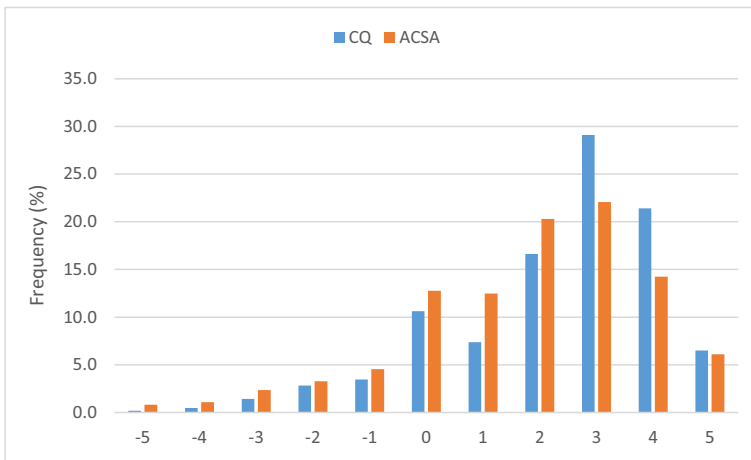
Fig. 2 Distributions of ACSA and CQ scores

possibility that it would also be less influenced by psychological traits such as optimism/pessimism and extraversion/introversion, which are powerful predictors of SWB" (Bernheim et al. 2006, p.244). The importance of personality traits in happiness research is indisputable (e.g., Veenhoven 2011; Diener 2000; Helliwell et al. 2012), yet it remains to be seen whether ACSA could be less influenced by these traits than CQ. In Table 5, we present a variance decomposition to shed light on the contribution of the different variables to the explanatory power of the models.

In the extended CQ model, both being male and being in a relationship positively contribute to people's level of happiness. These results confirm the findings of several review studies in the empirical happiness literature (Blanchflower and Oswald 2004; Dolan et al. 2008; Helliwell et al. 2012). In contrast to the findings of the reduced model (Table 3), age as such no longer contributes to explaining CQ, although its effect is likely to be reflected in our respondents' socio-economic situation. Pensioners are happier than people who are employed and the unemployed and those unable to work are less happy.

Table 3 Model as in Bernheim et al. (2006)

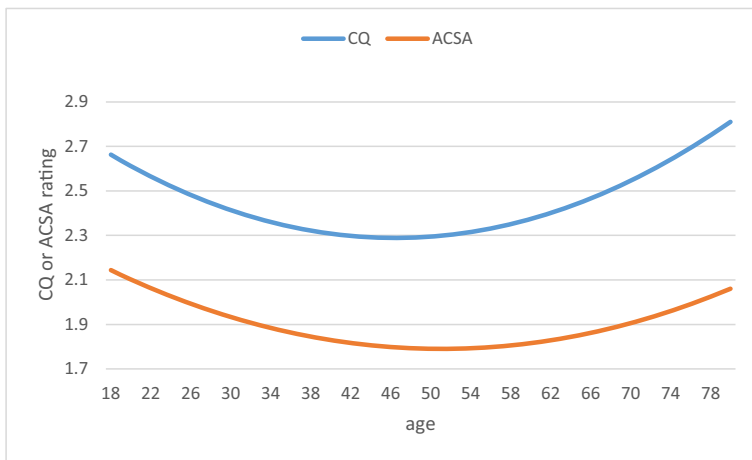|	CQ			ACSA		
	B	Beta	Sign	B	Beta	Sign
(Constant)	2.789		.000	1.869		.000
Gender	− .208	− .056	.040	− .195	− .047	.078
Age	− .043	− .411	.011	− .033	− .288	.072
Age²/1000	.463	.451	.007	.323	.287	.086
Lower educated	− .209	− .053	.118	− .067	− .016	.646
Higher educated	.144	.036	.255	.002	.000	.988
Employed	.205	.055	.109	.369	.089	.008
In a relationship	.498	.106	.000	.764	.147	.000
	Adj R^2 0.019			Adj R^2: 0.028		

Fig. 3 U-shape between age and happiness

The extended ACSA model closely resembles the CQ model in terms of significant variables, with the only difference being pensioners, who do not report being significantly happier when presented with the ACSA scale. Being a pensioner is a state-like variable, so this finding is in line with our previous findings. However, contrary to the findings of the reduced model, gender and being incapable of working are found to be significant in the extended ACSA model. Being female and being incapable of working are associated with lower levels of happiness as measured through both ACSA and CQ. This contradicts ACSA's purported insensitivity to socio-demographic variables that are not amenable to change.

Focusing on the personality traits, we find that all traits are significant in both models except for one—conscientiousness. The Betas in Table 4 indicate that extraversion is the most important personality trait for CQ, whereas ACSA is driven more by openness to experience than extraversion.

The variance decomposition analysis presented in Table 5 suggests a minor role in both models for the variables that are not amenable to change (i.e. gender, age and education), as these variables explain less than 10% of the total variance of the CQ and ACSA ratings. The socio-economic position of the respondent is found to be more important for CQ, whereas being in a relationship is more important for ACSA. Finally, the personality traits have the greatest impact on CQ and ACSA ratings, as they explain more than half of the variance in the respective models.[8] For CQ, extraversion alone explains a quarter of the total variance (for ACSA, this is only 12%).

These results for the general population partially contradict the study of Bernheim et al. (2006) among hospital patients. First, when a wider range of socio-economic positions and personality traits are included in the model, ACSA is found to be less sensitive than the CQ, but not insensitive to variables not amenable to change. Second, although ACSA is equally influenced by the HEXACO personality traits as CQ, the impact of individual personality traits differs—extraversion, for example, has less influence on ACSA.

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[8] Note that deleting the variables concerning age or education (that are not significant) has no effect on the results and conclusions.

Table 4 Extended model (including socio-economic situation and personality traits)

	CQ			ACSA		
	B	Beta	Sign	B	Beta	Sign
(Constant)	2.038		0.000	1.531		0.002
Gender	− 0.284	− 0.076	0.007	− 0.297	− 0.072	0.011
Age	− 0.014	− 0.129	0.449	− 0.017	− 0.147	0.389
Age^2/1000	− 0.038	− 0.037	0.837	− 0.017	− 0.015	0.936
Lower educated	− 0.060	− 0.015	0.644	0.065	0.015	0.649
Higher educated	0.131	0.033	0.284	− 0.044	− 0.010	0.745
Student	0.033	0.004	0.898	− 0.281	− 0.032	0.322
Pensioner	0.654	0.154	0.002	0.331	0.071	0.156
Unemployed	− 1.030	− 0.111	0.000	− 1.279	− 0.126	0.000
Unable to work	− 1.412	− 0.145	0.000	− 1.224	− 0.115	0.000
Housewives/husband	0.171	0.019	0.467	0.143	0.015	0.582
Being in a relationship	0.428	0.091	0.001	0.685	0.133	0.000
Extraversion	0.220	0.168	0.000	0.138	0.096	0.000
Agreeableness	0.126	0.088	0.002	0.149	0.095	0.001
Emotionality	− 0.111	− 0.095	0.001	− 0.110	− 0.086	0.002
Conscientiousness	0.012	0.009	0.759	0.012	0.008	0.767
Openness to experience	0.088	0.059	0.035	0.165	0.100	0.000
Honesty	0.100	0.060	0.042	0.130	0.071	0.017
	Adj R^2: 0.124			Adj R^2: 0.109		

Discussion and Conclusion

Discussion

The self-anchored ACSA scale was originally developed to monitor (changes in) quality of life in clinical settings. In this study, however, we apply this scale in the wider, non-clinical setting of a general population. Moreover, we compare ACSA

Table 5 Variance decomposition for the extended model (%)

	CQ	ACSA
Gender, age, educational level	8.66	8.95
Socio-economic situation	31.54	22.77
Being in a relationship	6.50	16.40
Personality traits	53.30	51.88

The numbers in the table denote the percentage of the variance in the estimated CQ and ACSA explained by each of the (categories of) variables. They are calculated as the coefficient of a variable multiplied by the covariance between that variable and the predicted CQ or ACSA, divided by the variance of the predicted CQ or ACSA

ratings to ratings obtained from a more conventional happiness question (CQ) for a representative sample (in terms of gender, age, and life situation) for the region of Flanders, Belgium.

ACSA focuses on the best and worst periods in the respondents' lives and uses these as anchor points. Theuns et al. (2014) have recently proposed a list of catchword categories in which the characteristics of the numerous reported anchor periods can be organized. Social life—family, friends, relationships—is most frequently cited as the factor that best characterizes the best period in our respondents' lives. Health issues and personal events are most often assigned to the worst period. As all people everywhere have such happiness-determining experiences and our findings are in line with previous studies in different countries and settings, this seems to suggest that the anchors on the ACSA scale are in fact universal.

We find that the ACSA and CQ ratings are positively correlated (which is in line with previous research) and that ACSA ratings have a lower mean and a higher variation than the CQ ratings. The mean scores for both distributions differ significantly, while the mean is lower for ACSA. In addition, there is a difference in the skewness between ACSA and CQ, with a stronger skew toward higher ratings for CQ. The CQ distribution and skewness resembles the distribution of other conventional instruments. In affluent societies, there is a strong skew to high ratings (i.e., approximately 7 or 8 on a 0–10 scale). This may also reflect socially desirable or rather trivial responses. More notably, there is a difference in skewness between our study and Bernheim et al. (2006). Our (healthy respondent) population shows a skew toward high ratings for ACSA, whereas the diseased respondents studied by Bernheim et al. (2006) show a stronger skew toward lower ratings. Bernheim et al. (2006) interpreted their result as ACSA being more sensitive to the disease condition. In our study, the lower skewness toward high ratings with ACSA (compared to the CQ) may suggest that the responses were less socially desirable or trivial. Whatever the correct interpretation, at any rate, it is clear ACSA and CQ measure different things.

When exploring the differences in the determinants of happiness ratings between ACSA and CQ, we find some evidence that ACSA is less influenced by socio-demographic variables that are not amenable to change (e.g., age and gender), especially with a model in line with Bernheim et al. (2006) which considers a limited number of determinants. In an extended model that also includes personality traits and more specific socio-economic situations, we find that CQ and ACSA are mostly driven by the same determinants. Personality traits in general are the most important category of variables in both measurement instruments, as they explain the highest percentage of the variance in the CQ and ACSA scores. However, we have shown that extraversion is less important for ACSA than for CQ. This may be in line with the suggestion that a CQ elicits more trivial or socially desirable ratings of subjective well-being in affluent societies. Extraverts seem more likely to inflate their well-being or give trivial answers. One's socio-economic situation is more important for CQ, while being in a relationship matters more for ACSA. The trait-like variables (i.e., gender, age, education level) are of less importance in both models. In other words, our findings do not support Bernheim et al.'s (2006) suggestion that ACSA's insensitivity to socio-demographic variables might imply that it is less sensitive to psychological traits. In our general population, also ACSA ratings are influenced by socio-demographic factors.

On the basis of ACSA's insensitivity to variables that are not amenable to change (i.e. traits; some socio-demographic variables), Bernheim et al. (2006) advised against

using ACSA when such variables are the objectives of study. This recommendation does not hold in our more general setting. Overall, the most important differences between our study and previous ACSA research can probably be attributed to the basic differences in the research populations: while ours compromised the general population, the research population of previous research consisted of (severely) diseased respondents. The previously supposed insensitivity of ACSA to trait-like variables may be caused by the disease condition overruling the trait-like variables. This reasoning seems to be supported by our finding that health issues are most often related to the worst period in life. Future research could therefore compare a general population to a diseased population in the same region, using identical methodologies for both populations. In addition, longitudinal observations would also be interesting, as they would neutralize the effect of socio-demographic and trait factors.

In general, we find that the explanatory variables can explain only a small percentage of the variance in the ratings (R squared is low). It therefore seems that socio-demographic variables are rather weak determinants of quality of life. This implies that other characteristics (e.g., health, emotional and social aspect, relational issues) are more important determinants of subjective well-being.

Conclusion

We can conclude that ACSA is a meaningful scale to use and a valid alternative for conventional happiness measures, also outside the clinical setting in which it originated. The scale contains universal anchors that provide the happiness question with a frame of reference reducing the relativity bias of individual ratings (e.g., cultural and peer or proximal relativity). At the same time, the similarity concerning determinants with the more conventional question suggests that ACSA is in line with the established happiness literature. For policymakers, a better insight into the factors that make certain periods the best or worst periods in life offers opportunities to focus on policies that increase well-being, such as policies to support relational and family life and preventive health care.

Compliance with Ethical Standards

Conflict of Interest   The authors declare that they have no conflict of interest.

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