

Table S1

*Descriptive Statistics*

Variable	1952 SAMPLE					NON-OVERLAPPING REPLICATION SAMPLE					FULL SAMPLE				
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Birth year	224	1920.85	4.09	1906	1930	527	1923.75	7.67	1905	1940	17,466	1932.31	39.75	1831	1995
Age at debut	224	23.54	3.29	16	42	527	24.64	3.35	17	39	17,466	24.30	2.78	16	42
Career length	224	12.38	4.48	4	25	527	6.88	5.43	1	23	15,774	6.03	5.15	1	36
BMI	224	24.86	1.57	20.80	29.21	527	24.61	1.44	20.45	28.75	17,039	24.99	2.03	17.72	39.75
Subjective joy ratings	224	2.55	1.14	1.00	4.80	527	2.54	1.19	1.00	5.00					
FaceReader: Happiness	82	.26	.34	.00	1.00	160	.00	1.00	.29	.39	2,613	.21	.33	.00	1.00
Emotion API: Happiness	223	.55	.44	.00	1.00	522	.00	1.00	.50	.44	15,505	.36	.42	.00	1.00
CERT: Smile detection	213	.03	4.42	-9.23	10.00	480	-10.76	10.16	-.26	4.21	12,417	-.49	4.02	-11.07	14.80
CERT: Joy	213	.32	.37	.00	1.00	480	.00	1.00	.23	.34	12,419	.14	.26	.00	1.00
CERT: AU6	213	.97	.56	-.21	2.46	480	-.24	2.78	.83	.53	12,419	.59	.47	-.68	2.78
CERT: AU7	213	.61	.22	-.01	1.15	480	-.15	1.14	.54	.23	12,419	.35	.26	-.43	1.19
CERT: AU12	213	.31	1.22	-2.20	3.81	480	-2.77	3.88	.03	1.12	12,419	-.32	1.02	-3.50	4.86
Age of players who died	201	75.65	13.25	34	96	403	73.95	13.04	24	97	8,526	68.52	16.02	20	107
Age of players still alive	23	90.57	2.87	85	96	124	84.70	4.41	76	97	8,940	49.54	16.79	20	100

*Note.* AU6 = “cheek raiser”, AU7 = “lid tightener”, AU12 = “lip corner puller”; 1952 SAMPLE: 201 players (89.73%) had died at the time of the study, 23 players (10.27%) were still alive; college was attended by 71 players (32.14%); NON-OVERLAPPING REPLICATION SAMPLE: *N* = 527; 403 players (76.47%) had died at the time of the study, 124 players (23.53%) were still alive; college was attended by 201 players (38.14%); FULL SAMPLE: *N* = 8,526 (48.81%) players have died at the time of the study; 8,940 players (51.19%) were still alive; 7,941 players (45.47%) have attended college.

Table S2

*Intercorrelations Between Variables (Full Sample)*

	Birth year	Age at debut	Career length	BMI	“Age” variable	Survival status	Smile codings	Joy ratings	FR: Happiness	API: Happiness	CERT: Smile	CERT: Joy	CERT: AU6	CERT: AU7	CERT: AU12
College	.30**	.10**	-.02**	.07**	-.11**	-.29**	-.02	-.03	.10**	.10**	.08**	.06**	.03**	.02*	.04**
Birth year		.02**	.09**	.33**	-.60**	-.85**	.08*	.08*	.36**	.36**	.34**	.19**	.07**	-.13**	.20**
Age at debut			-.34**	.06**	.01	.01	.07*	.05	.04*	.04**	.04**	.01	.01	-.01	.03**
Career length				.05**	.04**	-.11**	-.09*	-.08*	-.01	.06**	.02*	.08**	.12**	.16**	.07**
BMI					-.35**	-.25**	-.01	-.01	.15**	.16**	.16**	.08**	-.01	-.17**	.05**
“Age” variable						.50**	-.01	.01	-.17**	-.22**	-.20**	-.06**	.10**	.36**	-.03**
Survival status							-.04	-.05	-.28**	-.24**	-.27**	-.10**	.00	.14**	-.11**
Smile codings								.87**	.70**	.86**	.76**	.81**	.70**	.23**	.71**
Joy ratings									.78**	.88**	.80**	.75**	.70**	.20**	.70**
FR: Happiness										.72**	.72**	.67**	.52**	.09**	.60**
API: Happiness											.75**	.66**	.62**	.13**	.65**
CERT: Smile												.62**	.59**	.11**	.59**
CERT: Joy													.78**	.29**	.72**
CERT: AU6														.61**	.75**
CERT: AU7															.29**

*Note.* \* $p < .05$  \*\* $p < .01$ ; College attendance: 1 = yes, 0 = no; survival status: 1 = player had died, 0 = player was still alive; AU6 = “cheek raiser”, AU7 = “lid tightener”, AU12 = “lip corner puller”; FR = FaceReader, API = Microsoft Emotion API; results on the “smile codings” variable are based on Spearman’s rank-order correlation. For *N*s of the different variables see Table S1.

Table S3

*Results of a Cox Regression Analysis Predicting Mortality by Human Subjective Ratings of Joy Intensity and Covariates*

	1952 SAMPLE					NON-OVERLAPPING REPLICATION SAMPLE				
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% CI	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% CI
Model I: Without covariates										
Subjective joy ratings	.005	.061	.929	1.01	[.89, 1.13]	-.047	.042	.264	.95	[.88, 1.04]
Model II: With covariates										
College	-.280	.159	.078	.76	[.55, 1.03]	-.358	.107	.001	.70	[.57, .86]
Birth year	-.053	.027	.050	.95	[.90, 1.00]	-.029	.009	.001	.97	[.95, .99]
Age at debut	-.027	.036	.461	.97	[.91, 1.05]	-.004	.019	.836	1.00	[.96, 1.03]
Career length	-.041	.025	.101	.96	[.91, 1.01]	-.019	.013	.151	.98	[.96, 1.01]
BMI	.037	.047	.432	1.04	[.95, 1.14]	.049	.037	.185	1.05	[.98, 1.13]
Subjective joy ratings	-.011	.062	.862	.99	[.88, 1.12]	-.037	.043	.390	.96	[.89, 1.05]

*Note.* 1952 SAMPLE:  $N = 224$ ; *SE* = standard error; *HR* = hazard ratio; CI = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $\chi^2(1) = .01$ ,  $p = .93$ ; Model II coefficients:  $\chi^2(6) = 9.67$ ,  $p = .14$ ; NON-OVERLAPPING REPLICATION SAMPLE:  $N = 527$ ; *SE* = standard error; *HR* = hazard ratio; CI = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $\chi^2(1) = 1.25$ ,  $p = .26$ ; Model II coefficients:  $\chi^2(6) = 29.32$ ,  $p < .001$ .

Table S4

*Results of Separate Cox Regressions Predicting Mortality by Automatic Codings of Facial Displays of Positive Affectivity from Different Computer Programs (Without Control for Covariates)*

	1952 SAMPLE						NON-OVERLAPPING REPLICATION SAMPLE						FULL SAMPLE					
	<i>N</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<i>OR</i>	95% CI	<i>N</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<i>OR</i>	95% CI	<i>N</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>OR</i>	95% CI
FaceReader																		
Happiness	82	.162	.328	.622	1.18	[.62,.23]	160	-.493	.244	.043	.61	[.38,.98]	2,609	-.560	.090	.000	.57	[.48,.68]
Happiness	82	.140	.252	.578	1.15	[.70,1.88]	160	-.386	.207	.062	.68	[.45,1.02]	2,609	-.367	.071	.000	.69	[.60,.80]
dichotomized																		
Microsoft																		
Emotion API																		
Happiness	223	.146	.163	.371	1.16	[84,1.59]	522	-.091	.112	.419	.91	[.73,1.14]	15,505	-.369	.031	.000	.69	[.65,.74]
Happiness	223	.135	.143	.347	1.14	[.86,1.51]	522	-.053	.100	.600	.95	[.78,1.15]	15,505	-.294	.028	.000	.75	[.71,.79]
dichotomized																		
CERT																		
Smile	213	.001	.016	.925	1.00	[.97,1.03]	480	-.010	.013	.420	.99	[.97,1.01]	12,417	-.037	.003	.000	.96	[.96,.97]
detection																		
Joy	213	.216	.193	.263	1.24	[.85,1.81]	480	-.276	.157	.080	.76	[.56,1.03]	12,417	-.444	.054	.000	.64	[.58,.71]
Joy	213	.134	.148	.368	1.14	[.85,1.53]	480	-.199	.122	.104	.82	[.64,1.04]	12,417	-.301	.039	.000	.74	[.69,.80]
dichotomized																		
AU6 (“cheek raiser”)	213	.056	.130	.668	1.06	[.82,1.36]	480	-.110	.095	.245	.90	[.74,1.08]	12,417	-.280	.028	.000	.76	[.72,.80]
AU7 (“lid tightener”)	213	-.086	.334	.796	.92	[.48,1.77]	480	-.041	.226	.857	.96	[.62,1.50]	12,417	-.623	.053	.000	.54	[.48,.59]
AU 12 (“lip corner puller”)	213	.074	.060	.218	1.08	[.96,1.21]	480	-.013	.044	.767	.99	[.90,1.08]	12,417	-.117	.012	.000	.89	[.87,.91]

*Note.* *SE* = standard error; *HR* = hazard ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no.

Table S5

*Results of Cox Regression Analyses Predicting Mortality by FaceReader Happiness Codings and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
Happiness	-.560	.090	<.001	0.57	[0.48, 0.68]
<b>Model II: With covariates</b>					
College	-.129	.056	.022	0.88	[0.79, 0.98]
Birth year	-.016	.001	<.001	0.98	[0.98, 0.99]
Age at debut	-.022	.009	.014	0.98	[0.96, 1.00]
Career length	-.028	.005	<.001	0.97	[0.96, 0.98]
BMI	.078	.016	<.001	1.08	[1.05, 1.12]
Happiness	-.170	.094	.070	0.84	[.70, 1.01]
<b>Model III: Birth year as covariate</b>					
Birth year	-.015	.001	.000	0.99	[.98, .99]
Happiness	-.176	.093	.060	0.84	[.70, 1.01]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1

= yes, 0 = no; Model I statistics:  $N = 2,609$ ,  $\chi^2(1) = 39.24$ ,  $p < .001$ ; Model II statistics:  $N =$

$2,197$ ,  $\chi^2(6) = 269.42$ ,  $p < .001$ ; Model III statistics:  $N = 2,609$ ,  $\chi^2(2) = 233.99$ ,  $p < .001$ .

Table S6

*Results of Cox Regression Analyses Predicting Mortality by the Emotion API Happiness Codings and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
Happiness	-.369	.031	<.001	0.69	[0.65, 0.74]
<b>Model II: With covariates</b>					
College	-.206	.027	<.001	0.81	[0.77, 0.86]
Birth year	-.017	.001	<.001	0.98	[0.98, 0.98]
Age at debut	-.023	.004	<.001	0.98	[0.97, 0.99]
Career length	-.018	.002	<.001	0.98	[0.98, 0.99]
BMI	.046	.008	<.001	1.05	[1.03, 1.06]
Happiness	.046	.034	.174	1.05	[0.98, 1.12]
<b>Model III: Birth year as covariate</b>					
Birth year	-.018	.000	.000	.98	[.98, .98]
Happiness	.022	.034	.515	1.02	[.96, 1.09]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 15,505$ ,  $\chi^2(1) = 138.85$ ,  $p < .001$ ; Model II statistics:  $N = 13,530$ ,  $\chi^2(6) = 1525.42$ ,  $p < .001$ ; Model III statistics:  $N = N = 15,505$ ,  $\chi^2(2) = 1566.67$ ,  $p < .001$ .

Table S7

*Results of Cox Regression Analyses Predicting Mortality by CERT Smile Detection Codings and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
<hr/>					
Model I: Without covariates	-.037	.003	<.001	0.96	[.96, .97]
Smile detection					
<hr/>					
Model II: With covariates					
College	-.203	.030	<.001	0.82	[0.77, 0.87]
Birth year	-.017	.001	<.001	0.98	[0.98, 0.98]
Age at debut	-.021	.005	<.001	0.98	[0.97, 0.99]
Career length	-.017	.003	<.001	0.98	[0.98, 0.99]
BMI	.043	.008	<.001	1.04	[1.03, 1.06]
Smile detection	-.003	.004	.490	1.00	[.99, 1.00]
<hr/>					
Model III: Birth year as covariate					
Birth year	-.018	.001	.000	.98	[.98, .98]
Smile detection	-.004	.004	.305	1.00	[.99, 1.00]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 12,417$ ,  $\chi^2(1) = 112.37$ ,  $p < .001$ ; Model II coefficients:  $N = 10,652$ ,  $\chi^2(6) = 1884.36$ ,  $p < .001$ ; Model III statistics:  $N = 12,417$ ,  $\chi^2(2) = 1243.38$ ,  $p < .001$ .

Table S8

*Results of Cox Regression Analyses Predicting Mortality by CERT joy Codings and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
Joy	-.444	.054	<.001	0.64	[0.58, 0.71]
<b>Model II: With covariates</b>					
College	-.203	.030	<.001	0.82	[0.77, 0.86]
Birth year	-.017	.001	<.001	0.98	[0.98, 0.98]
Age at debut	-.021	.005	<.001	0.98	[0.97, 0.99]
Career length	-.016	.003	<.001	0.98	[0.98, 0.99]
BMI	.043	.008	<.001	1.04	[1.03, 1.06]
Joy	.000	.054	.994	1.00	[0.90, 1.11]
<b>Model III: Birth year as covariate</b>					
Birth year	-.018	.001	.000	.98	[.98, .98]
Joy	-.038	.054	.476	.96	[.87, 1.07]

*Note.* *SE* = standard error *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 12,419$ ,  $\chi^2(1) = 69.34$ ,  $p < .001$ ; Model II statistics:  $N = 10,654$ ,  $\chi^2(6) = 1183.73$ ,  $p < .001$ ; Model III statistics:  $N = 12,419$ ,  $\chi^2(2) = 1243.17$ ,  $p < .001$ .



Table S9

*Results of Cox Regression Analyses Predicting Mortality by Dichotomized Happiness**Codings From FaceReader and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
FaceReader: happiness dichotomized	-.367	.071	<.001	0.69	[0.60, 0.80]
<b>Model II: With covariates</b>					
College	-.127	.056	.024	0.88	[0.79, 0.98]
Birth year	-.016	.001	<.001	0.98	[0.98, 0.99]
Age at debut	-.023	.009	.012	0.98	[0.96, 1.00]
Career length	-.028	.005	<.001	0.97	[0.96, 0.98]
BMI	.079	.016	<.001	1.08	[1.05, 1.12]
FaceReader: happiness dichotomized	-.105	.074	.158	0.90	[0.78, 1.04]
<b>Model III: Birth year as covariate</b>					
Birth year	-.015	.001	.000	.99	[.98, .99]
FaceReader: happiness dichotomized	-.109	.074	.141	.90	[.78, 1.04]

*Note.* *SE* = standard error; *OR* = *HR* = hazards ratio; *CI* = confidence interval; college

attendance: 1 = yes, 0 = no; Model I statistics:  $N = 2,609$ ,  $\chi^2(1) = 27.21$ ,  $p < .001$ ; Model II

statistics:  $N = 2,197$ ,  $\chi^2(6) = 268.69$ ,  $p < .001$ ; Model III statistics:  $N = 2,609$ ,  $\chi^2(2) = 232.94$ ,

$p < .001$ .

Table S10

*Results of Cox Regression Analyses Predicting Mortality by Dichotomized Happiness Codings From the Microsoft Emotion API and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>P</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
Microsoft Emotion API: happiness dichotomized	-.294	.028	<.001	0.75	[0.71, 0.79]
<b>Model II: With covariates</b>					
College	-.206	.027	<.001	0.81	[0.77, 0.86]
Birth year	-.017	.001	<.001	0.98	[0.98, 0.98]
Age at debut	-.023	.004	<.001	0.98	[0.97, 0.99]
Career length	-.018	.002	<.001	0.98	[0.98, 0.99]
BMI	.046	.008	<.001	1.05	[1.03, 1.06]
Microsoft Emotion API: happiness dichotomized	.052	.030	.077	1.05	[0.99, 1.12]
<b>Model III: Birth year as covariate</b>					
Birth year	-.018	.000	.000	.98	[.98, .98]
Microsoft Emotion API: happiness dichotomized	.030	.029	.313	1.03	[.97, 1.09]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 15,505$ ,  $\chi^2(1) = 114.30$ ,  $p < .001$ ; Model II statistics:  $N = 13,530$ ,  $\chi^2(6) = 1526.04$ ,  $p < .001$ ; Model III statistics:  $N = 15,505$ ,  $\chi^2(2) = 1566.53$ ,  $p < .001$ .

Table S11

*Results of Cox Regression Analyses Predicting Mortality by Dichotomized Joy Codings from CERT and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>P</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
CERT: joy dichotomized	-.301	.039	<.000	0.74	[0.69, 0.80]
<b>Model II: With covariates</b>					
College	-.203	.030	<.000	0.82	[0.77, 0.86]
Birth year	-.017	.001	<.000	0.98	[0.98, 0.98]
Age at debut	-.021	.005	<.000	0.98	[0.97, 0.99]
Career length	-.016	.003	<.000	0.98	[0.98, 0.99]
BMI	.043	.008	<.000	1.04	[1.03, 1.06]
CERT: joy dichotomized	-.001	.041	.971	1.00	[0.92, 1.08]
<b>Model III: Birth year as covariate</b>					
Birth year	-.018	.001	.000	.98	[.98, .98]
CERT: joy dichotomized	-.033	.041	.413	.97	[.89, 1.05]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 12,419$ ,  $\chi^2(1) = 58.92$ ,  $p < .001$ ; Model II statistics:  $N = 10,654$ ,  $\chi^2(6) = 1183.50$ ,  $p < .001$ ; Model III statistics:  $N = 12,419$ ,  $\chi^2(2) = 1242.92$ ,  $p < .001$ .

Table S12

*Results of Cox Regression Analyses Predicting Mortality by CERT Activity Codings of Facial Action Unit 6 (“Cheek Raiser”) and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
Happiness	-.280	.028	<.000	0.76	[0.72, 0.80]
<b>Model II: With covariates</b>					
College	-.203	.030	<.000	0.82	[0.77, 0.86]
Birth year	-.017	.001	<.000	0.98	[0.98, 0.98]
Age at debut	-.021	.005	<.000	0.98	[0.97, 0.99]
Career length	-.017	.003	<.000	0.98	[0.98, 0.99]
BMI	.043	.008	<.000	1.04	[1.03, 1.06]
AU6	.013	.029	.663	1.01	[0.96, 1.07]
<b>Model III: Birth year as covariate</b>					
Birth year	-.018	.001	.000	.98	[.98, .98]
AU6	-.015	.029	.598	.99	[.93, 1.04]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 12,419$ ,  $\chi^2(1) = 101.07$ ,  $p < .001$ ; Model II coefficients:  $N = 10,654$ ,  $\chi^2(6) = 1184.36$ ,  $p < .001$ ; Model III statistics:  $N = 12,419$ ,  $\chi^2(2) = 1245.56$ ,  $p < .001$ .

Table S13

*Results of Cox Regression Analyses Predicting Mortality by CERT Activity Codings of Facial Action Unit 7 (“Lid Tightener”) and Covariates (Based on the Full Sample)*

	<i>b</i>	<i>SE</i>	<i>P</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
Happiness	-.623	.053	<.000	0.54	[0.48, 0.59]
<b>Model II: With covariates</b>					
College	-.204	.030	<.000	0.82	[0.77, 0.86]
Birth year	-.017	.001	<.000	0.98	[0.98, 0.98]
Age at debut	-.022	.005	<.000	0.98	[0.97, 0.99]
Career length	-.017	.003	<.000	0.98	[0.98, 0.99]
BMI	.043	.008	<.000	1.04	[1.03, 1.06]
AU7	.111	.059	.063	1.12	[0.99, 1.25]
<b>Model III: Birth year as covariate</b>					
Birth year	-.018	.001	.000	.98	[.98, .98]
AU7	.024	.057	.676	1.02	[.92, 1.14]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 12,419$ ,  $\chi^2(1) = 138.63$ ,  $p < .001$ ; Model II statistics:  $N = 10,654$ ,  $\chi^2(6) = 1183.06$ ,  $p < .001$ ; Model III statistics:  $N = 12,419$ ,  $\chi^2(2) = 1241.97$ ,  $p < .001$ .

Table S14

*Results of Cox Regression Analyses Predicting Mortality by CERT Activity Codings of Facial Action Unit 12 (Lip Corner Puller) and Covariates (Based on the Full Sample)*

	<i>B</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
<b>Model I: Without covariates</b>					
Happiness	-.117	.012	<.000	0.89	[0.87, 0.91]
<b>Model II: With covariates</b>					
College	-.203	.030	<.000	0.82	[0.77, 0.87]
Birth year	-.017	.001	<.000	0.98	[0.98, 0.98]
Age at debut	-.021	.005	<.000	0.98	[0.97, 0.99]
Career length	-.016	.003	<.000	0.98	[0.98, 0.99]
BMI	.043	.008	<.000	1.04	[1.03, 1.06]
AU 12	.005	.013	.714	1.00	[0.98, 1.03]
<b>Model III: Birth year as covariate</b>					
Birth year	-.018	.001	.000	.98	[.98, .98]
AU12	.000	.013	.989	1.00	[.98, 1.03]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval; college attendance: 1 = yes, 0 = no; Model I statistics:  $N = 12,419$ ,  $\chi^2(1) = 87.49$ ,  $p < .001$ ; Model II statistics:  $N = 10,654$ ,  $\chi^2(6) = 1183.49$ ,  $p < .001$ ; Model III statistics:  $N = 12,419$ ,  $\chi^2(2) = 1242.31$ ,  $p < .001$ .

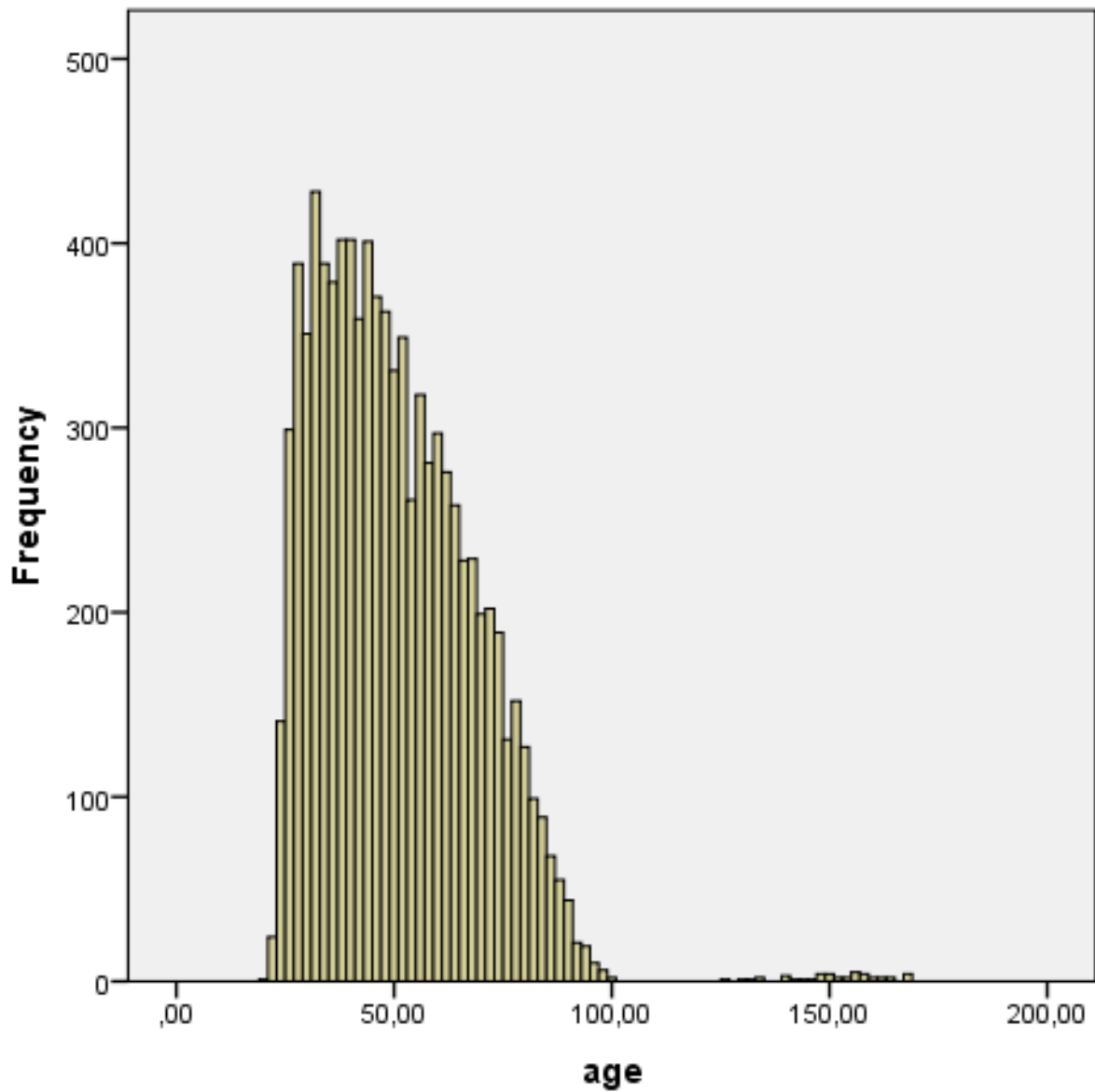
Table S15

*Results of Cox Regression Analyses Predicting Mortality by Happiness Codings From the Microsoft Emotion API Separately for Different Birth Cohorts (controlling for college attendance, birth year, age at debut, career length, & BMI)*

Birth year	<i>b</i>	<i>SE</i>	<i>p</i>	<i>HR</i>	95% <i>CI</i>
WITHOUT COVARIATES					
<1869	-.108	.281	.701	.90	[.52, 1.56]
1870-1879	.017	.239	.944	1.02	[.64, 1.62]
1880-1889	-.128	.120	.284	.88	[.70, 1.11]
1890-1899	.049	.094	.603	1.05	[.87, 1.26]
1900-1909	-.127	.081	.117	.88	[.75, 1.03]
1910-1919	-.013	.068	.851	.99	[.86, 1.13]
1920-1929	-.026	.082	.749	.97	[.83, 1.14]
1930-1939	-.082	.127	.520	.92	[.72, 1.18]
1940-1949	.295	.178	.097	1.34	[.95, 1.90]
1950-1959	.158	.277	.569	1.17	[.68, 2.02]
1960-1969	-.216	.401	.590	.81	[.37, 1.77]
> 1970	-.449	.478	.347	.64	[.25, 1.63]
WITH COVARIATES					
<1869	.034	.298	.910	1.03	[.58, 1.85]
1870-1879	.082	.260	.751	1.09	[.65, 1.81]
1880-1889	-.076	.124	.540	.93	[.73, 1.18]
1890-1899	.053	.096	.578	1.05	[.87, 1.27]
1900-1909	-.065	.082	.427	.94	[.80, 1.10]
1910-1919	.010	.068	.878	1.01	[.88, 1.16]
1920-1929	-.005	.082	.947	.99	[.85, 1.17]
1930-1939	-.083	.128	.516	.92	[.72, 1.18]
1940-1949	.344	.180	.057	1.41	[.99, 2.01]
1950-1959	.183	.280	.513	1.20	[.69, 2.08]
1960-1969	-.133	.404	.742	.88	[.40, 1.93]
> 1970	-.112	.488	.818	.89	[.34, 2.33]

*Note.* *SE* = standard error; *HR* = hazards ratio; *CI* = confidence interval.

Figure S1. Frequencies for the age variable for players with no entry on the variable “death year” in the raw dataset.



Note. The age variable was computed by subtracting the birth year from the year in which we retrieved the data (2015).



Figure S2. 1952 replication sample: Proportion of Baseball players surviving to a given age as a function of their smile intensity (controlling for college attendance, birth year, age at debut, career length, & BMI). Each curve represents the probability of survival as predicted by a particular smiling behavior: 0 = no smile, 1 = partial smile, 2 = full smile.

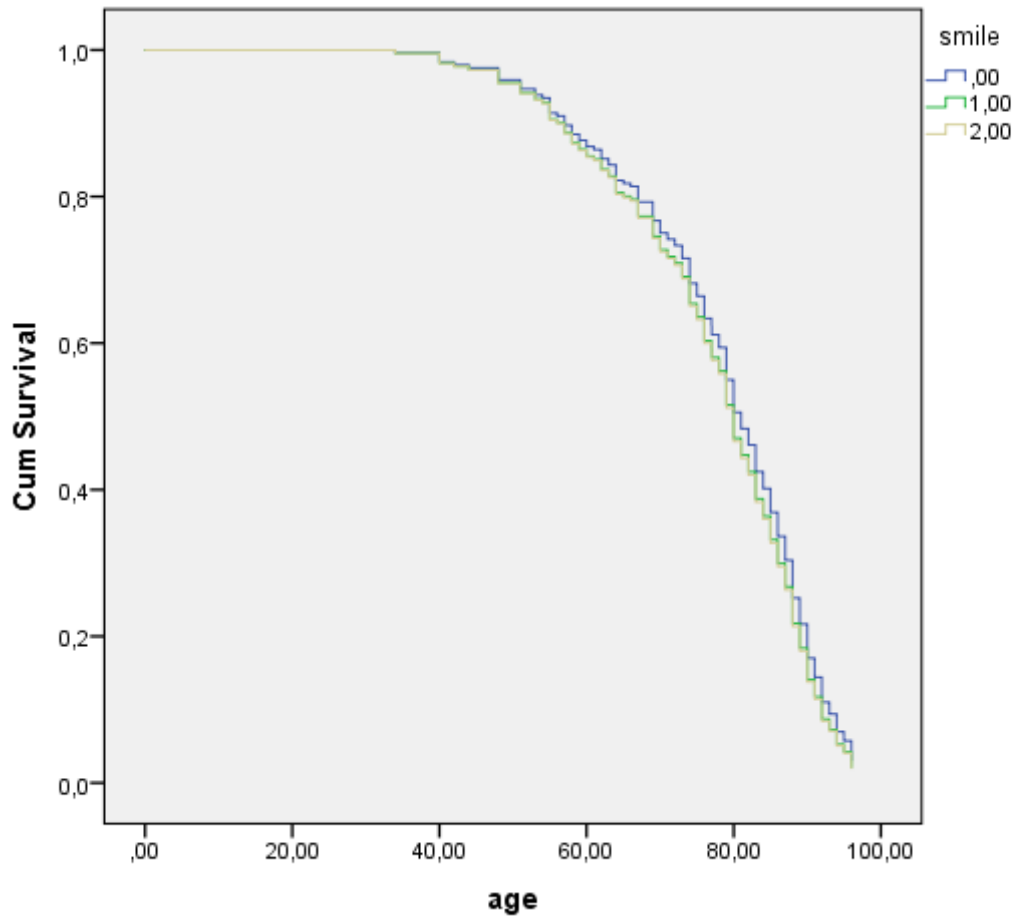


Figure S3. Non-overlapping replication sample: Proportion of Baseball players surviving to a given age as a function of their smile intensity (controlling for college attendance, birth year, age at debut, career length, & BMI). Each curve represents the probability of survival as predicted by a particular smiling behavior: 0 = no smile, 1 = partial smile, 2 = full smile.

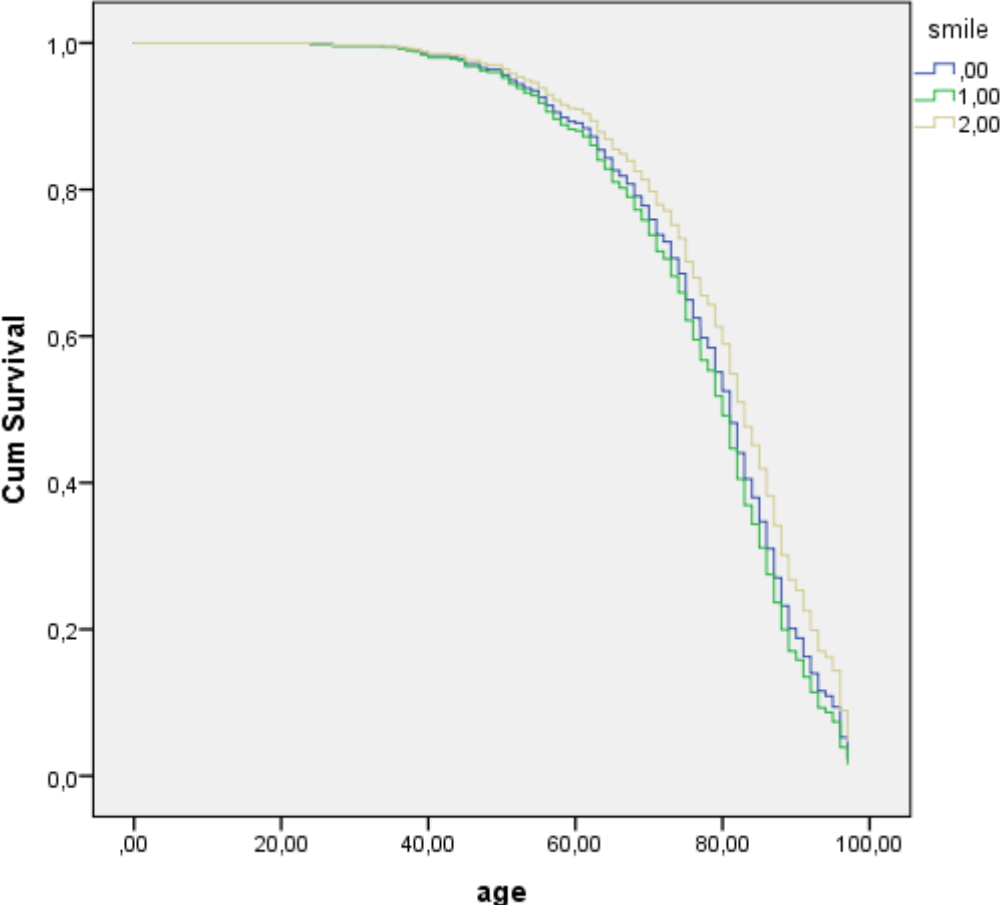


Figure S4. Full sample: Mean happiness scores (coded by the Microsoft Emotion API) as a function of birth year.

