## Supplementary Material

## 1. Participants

Table S1
Characteristics of the sample ( $N=30,793$ ).

| Characteristic | Female (\%) | Male (\%) |
| :---: | :---: | :---: |
| Country | 61.70 | 32.90 |
| France | 2.40 | 0.90 |
| Switzerland | 0.30 | 0.30 |
| Belgium | 1.00 | 0.50 |
| Other countries |  |  |
| Age Range | 1.00 | 0.50 |
| $<15$ | 12.80 | 6.60 |
| $15-19$ | 17.70 | 9.10 |
| $20-24$ | 12.90 | 6.80 |
| $25-29$ | 9.20 | 5.00 |
| $30-34$ | 5.10 | 3.00 |
| $35-39$ | 3.40 | 1.90 |
| $40-44$ | 1.70 | 1.00 |
| $45-49$ | 1.00 | 0.40 |
| $50-54$ | 0.40 | 0.20 |
| $55-59$ | 0.20 | 0.10 |
| $60-64$ | 0.10 | 0.00 |
| $65+$ |  | 34.60 |
| Total |  |  |



Figure S1. (a) Participants received notifications at random times informing them that a new questionnaire was available. (b) By clicking on the notification, they were then offered to either reject ("Rejeter"), snooze for 9 min ("Snooze"), or answer the questionnaire ("Passer le test"). (c) The questionnaire then consisted of several questions (one per screen).


Figure S2. Frequency of questionnaires recorded as a function of the time of day and day of week.

## 2. Procedure and Experience Sampling

The present study was one of several studies included in the " 58 seconds" research project, a multi-lab collaborative effort to collect large scale experience-sampling data in the general population. For this specific study, and knowing that people's time was limited (all surveys were designed to take less than a minute), we used a broad 1-item happiness measure, which could easily be asked several times in a row in conjunction with "longer" multiple choice questions about interaction partners and activities. We note, however, that on random occasion participants were also asked several other questions (typically 1 to 3 ) pertaining to other studies running on the platform. These additional questions related to 11 categories (see Table S2).

Table S2
Types of items that were sometimes asked alongside our target happiness and social behavior items on random occasions.

| Categories of questions | Examples of items |
| :---: | :---: |
| Eudemonic well-being | "I feel that my life has meaning", "I am contributing the well-being of others", "I feel in control"... |
| Physical Health | "How many hours did you sleep last night?", "Are you currently suffering from migraine?", "Are you currently experiencing physical pain?"... |
| Mental health | Are you currently feeling depressed?", "Do you currently feel empty?", "Are you currently worried about your physical appearance?"... |
| Life style | "What type of music did you listen to today","What is the last thing you ate?" "Where would you go on vacation?"... |
| Attitudes and beliefs | "How much are you currently believing in God?", "How much do you currently care about social justice?", "How important is it for you to be honest right now?"... |
| Emotions | "How stressed are you right now?", "Do you currently feel positive emotion?", "Do you currently feel negative emotion?", "Do you currently feel angry?"... |
| Creativity | "Find a word related to the following 3 words: Bass, Complex, Sleep", "How creative do you currently feel?" |
| Attention | "Did your mind wonder?", "Do you feel mindful?", "Were you on 'auto-pilot'?" ... |
| Forecasts | "How happy do you think you'll be on average next week?", "Do you think your values will changes in the next 10 years?"... |
| Personality | "How extravert do you feel right now?", "How conscientious do you feel right now?"... |
| Miscellaneous | "How many text message did you send today?" "Are you cold?,"Do you trust the people around you?" |

## 3. Regression Model

3.1. Random Effects. While all the analyses we report include both a random intercept and a random slope to account for the nested structure of the data, in line with recommendation by Barr, Levy, Scheepers, and Tily (2013), we note that in some cases, the simpler regression models (i.e., random intercept only) were better supported by the data, as indicated by a lower Akaike Information Criterion (AIC; see Table S3). Crucially, results from these simpler models were virtually identical to one we report in the manuscript (see Table S4).

Table S3.
AIC for all models and all types of interaction partners.

| Interaction Partner | Random Intercept Only | Random Intercept and Slope |
| :--- | :---: | :---: |
| Any person | 977911.77 | 977777.75 |
| Friend(s) | 1243505.65 | 1243507.65 |
| Best friend | 1222359.03 | 1222361.00 |
| Other Family | 1346377.91 | 1345176.91 |
| Kid(s) | 1285764.89 | 1285766.84 |
| Sibling(s) | 1316426.83 | 1315600.31 |
| Acquaintance(s) | 1227140.00 | 1227142.32 |
| Romantic Partner | 1150263.24 | 1150217.27 |
| Parent(s) | 1215490.95 | 1214930.25 |
| Co-worker(s) | 1414757.47 | 1414759.47 |
| Stranger(s) | 1389083.15 | 1387815.51 |

Table S4.
Probability (OR) of interacting with different types of interaction partners at time $t+1$ when participants happiness at time t is one standard deviation below the mean.

| Interaction Partner | Random Intercept <br> Only | Random Intercept and <br> Random Slope |
| :--- | :--- | :--- |
| Any person | $1.068[1.053,1.083]^{* * *}$ | $1.067[1.052,1.083]^{* * *}$ |
| Friend(s) | $1.214[1.183,1.246]^{* * *}$ | $1.214[1.183,1.246]^{* * *}$ |
| Best friend | $1.095[1.069,1.123]^{* * *}$ | $1.095[1.069,1.123]^{* * *}$ |
| Other Family | $1.094[1.057,1.132]^{* * *}$ | $1.093[1.057,1.131]^{* * *}$ |
| Kid(s) | $1.075[1.045,1.106]^{* * *}$ | $1.075[1.045,1.106]^{* * *}$ |
| Sibling(s) | $1.049[1.015,1.083]^{* *}$ | $1.050[1.016,1.084]^{* *}$ |
| Acquaintance(s) | $1.026[1.001,1.053]$ | $1.026[1.001,1.053]$ |
| Romantic Partner | $1.015[0.995,1.036]$ | $1.015[0.995,1.036]$ |
| Parent(s) | $1.013[0.988,1.039]$ | $1.014[0.989,1.04]$ |
| Co-worker(s) | $0.986[0.959,1.013]$ | $0.986[0.959,1.013]$ |
| Stranger(s) | $0.940[0.905,0.976]^{* *}$ | $0.941[0.906,0.977]^{* *}$ |

3.2. Estimation of the hedonic impact of interaction partners. Before computing the changes in happiness from time $t$ to $t+l$ for the different interaction partners, we examined whether these might be confounded by the types of activities people typically engage in while interacting with these partners. As shown in the Table S 5 below, most interaction partners only showed modest associations specific activities. There were, however, two notable exceptions: kid(s), which was strongly associated with childcare ( $r=.47$ ), and co-worker(s), which was strongly associated with working $(r=.52)$. Because these two activities have been shown to have important effect on people's happiness (see e.g., Kahneman, Krueger, Schkade, Schwarz, \& Stone, 2004) and in order to prevent confounding effects, we added whether participants were engaged in childcare as a control variable in the model estimating the hedonic impact of $\operatorname{kid}(\mathrm{s})$, and we added whether participants were working as a control variable in the model estimating the hedonic impact of coworker(s).

Table S5.
Correlations between interaction partners and engagement in different daily activities.

| Activities | Kid(s) | Best friend | Friend(s) | Other Family | Sibling(s) | Romantic Partner | Acquaintance(s) | Parent(s) | Co-worker(s) | Stranger(s) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Leisure | .006* | .028*******) | .058*******) | . $014^{* *}$ | .016******) | .022*******) | .046******) | .007*******) | -.032**** | .023*** |
| Nature | $.025^{* *}$ | $.021^{* *}$ | $.017^{* *}$ | $.022^{* *}$ | $.008^{* *}$ | . 026 ** | . 010 ** | .008*** | -.019** | .007*** |
| Sports | -.015** | . 023 *** | . 054 *** | -. 001 | . 001 | -.013** | . 076 ** | . 002 | -.018** | . $0633^{* *}$ |
| Culture | -. 002 | .026** | . 039 ** | .013*** | . $017{ }^{* *}$ | .011** | .037** | .012** | -0.001 | .054********) |
| TV | -.039** | -.025** | -.096** | -.021** | . 035 ** | .077** | -.076** | .052** | -. $167^{* *}$ | -.096** |
| Drinking | . 020 ** | . 056 ** | . $102{ }^{* *}$ | . 058 ** | . $047^{* *}$ | . 055 ** | . 043 ** | . 057 ** | $-.029^{* *}$ | . 004 |
| Eating | . 044 ** | . 023 ** | $.037^{* *}$ | . 071 *** | . 070 ** | . 074 ** | . 002 | .093*******) | -.043** | -.032** |
| Talking | 0.00 | .146** | . 252 ** | . $138{ }^{* *}$ | . 103 ** | . $117{ }^{* *}$ | . 100 ** | . $115{ }^{* *}$ | . 002 | -. 001 |
| Playing | $.014^{* *}$ | . $013{ }^{* *}$ | . $018{ }^{* *}$ | . 023 *** | . $032 * *$ | . 017 ** | . 003 | . 015 ** | -.051** | $-.017^{* *}$ |
| Childcare | . 467 ** | $-.016^{* *}$ | $-.039^{* *}$ | . $029^{* *}$ | -.012** | . $064 * *$ | -.016** | -.033** | -.055** | $-.023^{* *}$ |
| Waiting | -.013** | . 01 ******** $^{\text {a }}$ | . 025 ******* | 0.00 | -0.001 | -.021** | . 043 ** | . 001 | -.009** | . $144 * *$ |
| House chores | $.068^{* *}$ | $-.011^{* *}$ | $-.037^{* *}$ | $-.011^{* *}$ | $-.016^{* *}$ | $.013^{* *}$ | $-.017^{* *}$ | $-.023^{* *}$ | $-.047^{* *}$ | -.025** |
| Commuting | -.024** | . $008{ }^{* *}$ | .006* | -.006* | $-.009^{* *}$ | -.034** | . $008{ }^{* *}$ | -.006** | $-.046 * *$ | . 220 ** |
| Working | -. $135^{* *}$ | -.022** | . $027^{* *}$ | -. 080 ** | -.069** | -. 194 ** | .087** | -.096** | . 520 ** | . 025 ** |

3.3. Bootstrap Re-samples. We tested the robustness of our regression results in five bootstrap resampled datasets (keeping the multilevel structure, with observations nested in participants). All significant odd-ratios we reported in Figure 3A remained significant in all five bootstrap resampled datasets. All significant changes in happiness we reported in Figure 3B remained significant in all five bootstrap resampled datasets. Finally, there was no change in the direction of any of these coefficients.

## 4. Ruling Out Natural Rhythms

Both participants' propensity to interact with different partners and their levels of happiness were characterized by systematic daily fluctuations. For example, participants were over twice more likely to be with their romantic partner in the evening rather than at noon (see Figure S3).

Likewise, participants were, on average, happier in the afternoon than in the morning (see Figure S4).


Figure S3. Frequency of social interactions as a function of the time of day.


Figure S4. Average happiness as a function of the time of day.

To ensure that our findings could not be explained by the natural rhythm of social interactions, we examined the different $\gamma_{c}^{j}$ in model [2], which included all interaction partners at time $t$ as covariates. As shown in Table S6, these analyses yielded results largely similar to ones reported in the main manuscript, casting doubt on the notion that daily social rhythm alone could account for our findings.

To ensure that our findings could not be explained by the natural rhythm in levels of happiness, we examined the different $\gamma_{c}^{j}$ in model [3], which used a happiness independent variable that had been previously normalized by subtracting from the population-wise average happiness at that time of day. As shown in Table S6, these analyses yielded results largely
similar to ones reported in the main manuscript, casting doubt on the notion that daily happiness rhythm alone could account for our findings.

Table S6.
Comparison of Model [1], Model [2], and Model [3].

| Interaction Partner | Model [1] | Model [2] | Model [3] |
| :--- | :--- | :--- | :--- |
| Any person | $1.067[1.052,1.083]^{* * *}$ | $1.085[1.070,1.101]^{* * *}$ | $1.067[1.052,1.082]^{* * *}$ |
| Friend(s) | $1.214[1.183,1.246]^{* * *}$ | $1.209[1.178,1.241]^{* * *}$ | $1.214[1.183,1.246]^{* * *}$ |
| Best friend | $1.095[1.069,1.123]^{* * *}$ | $1.100[1.064,1.138]^{* * *}$ | $1.095[1.069,1.123]^{* * *}$ |
| Other Family | $1.093[1.057,1.131]^{* * *}$ | $1.094[1.067,1.121]^{* * *}$ | $1.093[1.057,1.131]^{* * *}$ |
| Kid(s) | $1.075[1.045,1.106]^{* * *}$ | $1.052[1.023,1.082]^{* * *}$ | $1.075[1.045,1.106]^{* * *}$ |
| Sibling(s) | $1.050[1.016,1.084]^{* *}$ | $1.035[1.009,1.062]^{*}$ | $1.049[1.016,1.084]^{* *}$ |
| Acquaintance(s) | $1.026[1.001,1.053]$ | $1.033[1.000,1.067]$ | $1.026[1.001,1.053]$ |
| Romantic Partner | $1.015[0.995,1.036]$ | $1.007[0.986,1.027]$ | $1.015[0.995,1.036]$ |
| Parent(s) | $1.014[0.989,1.04]$ | $0.996[0.971,1.021]$ | $1.014[0.989,1.039]$ |
| Co-worker(s) | $0.986[0.959,1.013]$ | $0.959[0.934,0.985]^{* *}$ | $0.986[0.959,1.013]$ |
| Stranger(s) | $0.941[0.906,0.977]^{* *}$ | $0.940[0.906,0.976]^{* *}$ | $0.941[0.906,0.977]^{* *}$ |

### 5.1. Results from Multiple Imputations

Table S7.
Results from multiple imputation models examining the probability $(O R)$ of interacting with different types of interaction partners at time $t+1$ when participants happiness at time $t$ is one standard deviation below the mean, controlling for daily activities.

| Interaction Partner | Imputation 1 | Imputation 2 | Imputation 3 | Imputation 4 | Imputation 5 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Any person | $1.054[1.039,1.070]^{* * *}$ | $1.050[1.035,1.066]^{* * *}$ | $1.052[1.037,1.069]^{* * *}$ | $1.053[1.038,1.069]^{* * *}$ | $1.050[1.035,1.066]^{* * *}$ |
| Friend(s) | $1.186[1.155,1.219]^{* * *}$ | $1.182[1.213,1.150]^{* * *}$ | $1.183[1.214,1.151]^{* * *}$ | $1.185[1.218,1.155]^{* * *}$ | $1.178[1.209,1.147]^{* * *}$ |
| Best friend | $1.085[1.060,1.111]^{* * *}$ | $1.085[1.111,1.060]^{* * *}$ | $1.085[1.112,1.061]^{* * *}$ | $1.085[1.112,1.061]^{* * *}$ | $1.084[1.110,1.059]^{* * *}$ |
| Other Family | $1.074[1.038,1.111]^{* * *}$ | $1.077[1.114,1.041]^{* * *}$ | $1.074[1.111,1.038]^{* * *}$ | $1.077[1.114,1.041]^{* * *}$ | $1.074[1.111,1.037]^{* * *}$ |
| Kid(s) | $1.066[1.035,1.099]^{* * *}$ | $1.062[1.094,1.030]^{* * *}$ | $1.066[1.099,1.035]^{* * *}$ | $1.066[1.099,1.036]^{* * *}$ | $1.061[1.093,1.029]^{* * *}$ |
| Sibling(s) | $1.033[0.999,1.066]$ | $1.031[1.066,0.999]$ | $1.033[1.067,1.000]^{*}$ | $1.035[1.068,1.002]^{*}$ | $1.034[1.068,1.001]^{*}$ |
| Acquaintance(s) | $1.019[0.995,1.045]$ | $1.017[1.043,0.993]$ | $1.018[1.043,0.993]$ | $1.019[1.045,0.995]$ | $1.017[1.043,0.992]$ |
| Romantic Partner | $1.004[0.983,1.025]$ | $1.005[1.026,0.985]$ | $1.004[1.025,0.983]$ | $1.006[1.027,0.986]$ | $1.003[1.024,0.983]$ |
| Parent(s) | $1.003[0.978,1.029]$ | $1.003[1.028,0.977]$ | $1.004[1.029,0.979]$ | $1.004[1.029,0.979]$ | $1.003[1.028,0.978]$ |
| Co-worker(s) | $1.024[0.992,1.058]$ | $1.010[1.043,0.978]$ | $1.015[1.048,0.983]$ | $1.014[1.047,0.982]$ | $1.007[1.040,0.975]$ |
| Stranger(s) | $0.960[0.923,0.998]^{*}$ | $0.955[0.993,0.918]^{*}$ | $0.952[0.990,0.915]^{*}$ | $0.964[1.002,0.927]$ | $0.954[0.992,0.917]^{*}$ |

### 5.2. Moderation Analyses

Table S8.
Engagement in pleasant and unpleasant activities at time t moderates the relationship between happiness at tand propensity to be in the presence of others at $t+1$.

|  | $b$ | S.E. | $t$ | $p$ | ORadj | $\begin{gathered} \hline 95 \% \text { CI } \\ \text { Low } \end{gathered}$ | $\begin{gathered} \hline 95 \% \mathrm{CI} \\ \text { High } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intercept | -0.949 | 0.0449 | -21.153 | 0.000 | 0.387 | 0.355 | 0.423 |
| Happiness at time $t$ | -0.055 | 0.0169 | -3.229 | 0.001 | 0.947 | 0.916 | 0.979 |
| Happiness at $t^{*}$ Pleasant activity [ $=0$; not engaged] | -0.084 | 0.0146 | -5.759 | 0.000 | 0.92 | 0.894 | 0.946 |
| Happiness at $t^{*}$ Unpleasant activity [ $=0$; not engaged] | 0.054 | 0.0155 | 3.513 | 0.000 | 1.056 | 1.024 | 1.089 |
| Pleasant activity [ $=0$ ] | -0.816 | 0.0157 | -51.916 | 0.000 | 0.442 | 0.429 | 0.456 |
| Unpleasant activity [ $=0$ ] | -0.243 | 0.0177 | -13.713 | 0.000 | 0.784 | 0.758 | 0.812 |
| Average mood that day | 0.013 | 0.0004 | 35.584 | 0.000 | 1.013 | 1.013 | 1.014 |
| Alone at time t [ $=0$; not alone $]$ | 1.109 | 0.0133 | 83.231 | 0.000 | 3.03 | 2.952 | 3.11 |
| Time (00:00-01:59) | -0.009 | 0.077 | -0.114 | 0.909 | 0.991 | 0.852 | 1.153 |
| Time (02:00-03:59) | -0.221 | 0.1296 | -1.705 | 0.088 | 0.802 | 0.622 | 1.034 |
| Time (04:00-05:59) | -0.48 | 0.1005 | -4.779 | 0.000 | 0.619 | 0.508 | 0.753 |
| Time (06:00-07:59) | -0.018 | 0.0485 | -0.376 | 0.707 | 0.982 | 0.893 | 1.08 |
| Time (08:00-09:59) | 0.34 | 0.0425 | 7.997 | 0.000 | 1.405 | 1.293 | 1.527 |
| Time (10:00-11:59) | 0.435 | 0.0394 | 11.06 | 0.000 | 1.546 | 1.431 | 1.67 |
| Time (12:00-13:59) | 0.348 | 0.0373 | 9.324 | 0.000 | 1.416 | 1.316 | 1.523 |
| Time (14:00-15:59) | 0.391 | 0.0373 | 10.476 | 0.000 | 1.478 | 1.374 | 1.591 |
| Time (16:00-17:59) | 0.398 | 0.0357 | 11.156 | 0.000 | 1.49 | 1.389 | 1.598 |
| Time (18:00-19:59) | 0.488 | 0.0355 | 13.753 | 0.000 | 1.63 | 1.52 | 1.747 |
| Time (20:00-21:59) | 0.257 | 0.034 | 7.566 | 0.000 | 1.293 | 1.21 | 1.382 |
| Saturday | 0.311 | 0.0172 | 18.105 | 0.000 | 1.364 | 1.319 | 1.411 |
| Sunday | 0.118 | 0.0167 | 7.022 | 0.000 | 1.125 | 1.088 | 1.162 |

## Supplementary References

Barr, D. J., Levy, R., Scheepers, C., Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing: Keep it maximal. Journal of Memory and Language, 68, 255-278.

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., \& Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. Science, 306, 1776-1780.

