

1 Selflessness and Happiness in Everyday Life: An Experience Sampling Method Based Study

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9 published in Journal of Individual differences at <https://doi.org/10.1027/1614-0001/a000335>. It is  
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## Abstract

13           Using the Experience Sampling Method (ESM), this study examines the relationship  
14 between experienced selflessness and experienced happiness. Based on the Self-  
15 centered/Selflessness Happiness Model (SSHM), we hypothesized that: (a) these two constructs  
16 would be positively related and, (b) harmony feeling would mediate this relation. Using ESM, the  
17 participants ( $N = 63$ ) filled in a short survey, five times a day during two days (response rate =  
18 79.2%; 482 observations). A linear mixed-model analysis showed that selflessness and harmony  
19 feelings were significant predictors of happiness. Finally, a mediation analysis indicated that  
20 harmony feeling emerged as a significant mediator of the relationship between selflessness and  
21 happiness at the experienced level. Overall, the study supports the idea that happiness does not  
22 depend solely on the satisfaction of one's expectations but experiencing the self as an  
23 interdependent and relational entity also plays an important role. The implications of this study  
24 are discussed.

25           *Keywords:* Selflessness, Authentic-Durable Happiness, Harmony Feeling, Experience  
26 Sampling Method

28 **Introduction**

29 The rise of positive psychology in the first decades of the 21st century (Seligman, 2014)  
30 has strongly promoted the research on happiness in psychology (e.g., Linton, Dieppe, & Medina-  
31 Lara, 2015). Researchers have developed a wide diversity of happiness models (Deci & Ryan,  
32 2008; Huta & Waterman, 2014). A classical operationalization of happiness, still widely  
33 privileged today, is satisfaction with life, that is, a cognitive appreciation of one's life (Diener,  
34 Emmons, Larsen, & Griffin, 1985) or, more generally, subjective well-being (Diener, 2018;  
35 Kahneman & Krueger, 2006).

36 Recently, alternative models—more inspired by eastern conceptions of happiness—have  
37 emerged (Dambrun & Ricard, 2011; Delle Fave et al., 2016; Kjell, Daukantaitė, Hefferon, &  
38 Sikström, 2016). As Kjell et al. (2016) proposed, “satisfaction only represents *one* important  
39 aspect of cognitive well-being—involving the evaluative mindset based on self-centered  
40 expectations” (p. 894, emphasis in the original). Harmony in life would differ from satisfaction  
41 with life by more emphasizing balance and flexibility (Kjell et al., 2016).

42 Similarly, Dambrun and Ricard (2011) developed the Selflessness/Self-centeredness  
43 Happiness Model (SSHM), according to which the experience of a stable and independent self  
44 (i.e., self-centeredness) would lead to affliction and fluctuating happiness, whereas the experience  
45 of an interdependent and impermanent self (i.e., selflessness) would lead to authentic-durable  
46 happiness (A-DH). The main assumptions of the SSHM have been empirically tested, mostly  
47 using self-report questionnaires (Dambrun, 2016, 2017; Dambrun & Ricard, 2011; Dambrun et

48 al., 2012). In this paper, we aim to test the selflessness part of the model using a method that  
49 permits to assess happiness, selflessness, and related constructs at the experienced level.

### 50 **Selflessness/Self-centeredness Happiness Model**

51 The main assumption of the SSHM (Dambrun & Ricard, 2011) is that the nature of  
52 happiness one experiences (i.e., fluctuating vs. durable happiness) is related to two qualitatively  
53 distinct self-based psychological functioning, namely self-centeredness and selflessness.

54 According to the SSHM, the perception of the self as a well-defined entity with sharp boundaries,  
55 that is independently and permanently existent, characterizes self-centeredness. When behaving  
56 in a self-centered manner, one intuitively seeks to attain pleasure and reduce displeasure for the  
57 sake of this entity reified as truly distinct and relatively autonomous (i.e., hedonic principle).

58 Under this circumstance, specific affective reactions ensue (i.e., stimulus-driven pleasures and  
59 afflictive affects). Feelings of pleasure, joy, and transitory satisfaction emerge in dependence  
60 upon the appearance of certain stimuli—the attainment of expected positive outcomes and  
61 avoidance of negative ones. The facts that (1) appearance of the desired stimuli is not entirely  
62 under the control of the individual; and that (2) people become quickly accustomed to it (i.e.,  
63 hedonic adaptation) make stimulus-driven pleasures to be transitory and fleeting by nature. In  
64 addition, the impossibility of attaining what one seeks gives rise to afflictive affects. These are  
65 mental reactions - such as anger, jealousy, fear, and pride - that impair our well-being and have  
66 the tendency to reinforce self-centeredness. The alternation of short phases of well-being and ill-  
67 being defines fluctuating happiness.

68 One of the original contributions of the SSHM is that it does not describe self-  
69 centeredness as a unique possible way of functioning. The model proposes that the perception of  
70 the self as an impermanent and interdependent (with others, nature, or the universe at large) entity

71 is the basis for selflessness. When people recognize their own interdependence, they seek to  
72 harmoniously adjust all parts (including themselves) of the “whole” (‘harmony principle’). By  
73 virtue of this, one experiences emotional stability and the feeling of being in harmony, both  
74 leading to authentic-durable happiness, that is, a state of deep peace and contentment. This type  
75 of happiness is described as authentic because it does not depend on external circumstances but  
76 reflects a profoundly emotionally balanced “state of being” (Dambrun & Ricard, 2011, p. 139). It  
77 is durable due to being relatively free from externally driven emotional fluctuations. The SSHM  
78 describes at least two explanations of the relationship between selflessness and authentic-durable  
79 happiness. The first explanation concern the role of emotional stability has a mediator in the  
80 selflessness-happiness causation. In a selfless functioning, satisfaction and dissatisfaction are not  
81 dependent on the presence of specific external stimuli (i.e., pleasant and unpleasant ones).  
82 Therefore, emotional stability occurs because one gets free from excessive emotional reactions  
83 (i.e., afflictive affects). Instead, benevolent affects that characterize selflessness are unconditional  
84 (Dambrun & Ricard, 2012). For example, we can experience genuine love and compassion even  
85 toward people who dislike us (Sprecher & Fehr, 2006). Emotional stability was found to be  
86 positively associated with connectedness with others (Leary, Tipsord, & Tate, 2008) and  
87 happiness (DeNeve & Cooper, 1998; Hills & Argyle, 2001). According to the second  
88 explanation, the SSHM predicts that benevolent affects promote the feeling of being in harmony  
89 with others and the environment by acting in a selfless manner, and in harmony with oneself  
90 when intentions are in line with one’s intrinsic values. In turn, this feeling of being in harmony  
91 would contribute to the quality and the stability of inner peace, thus to authentic-durable  
92 happiness.

93           The main assumptions of the SSHM have been empirically tested (Dambrun, 2016;  
94   Dambrun & Ricard, 2012; Dambrun et al., 2012; Hanley, Baker, & Garland, 2017). Using self-  
95   assessment questionnaires, factor analyses confirmed that the items relating to selflessness and  
96   self-centeredness were loaded on their respective factor, so the two constructs appear to be  
97   distinct and relatively independent (Dambrun, 2017). Moreover, emotional stability and feeling  
98   of being in harmony mediated the effects of selflessness on authentic-durable happiness, whereas  
99   afflictive affects mediated the relationship between self-centeredness and fluctuating happiness.  
100   In an experimental task, Dambrun (2016) showed that meditation affected happiness and that the  
101   change in perceived body boundaries (i.e., a marker of selflessness; Ataria, Dor-Ziderman, &  
102   Berkovich-Ohana, 2015) mediated the positive change in happiness. More recently, Dambrun et  
103   al. (2019) found that the effect of meditation on happiness was explained by greater feelings of  
104   unity (i.e., another marker for selflessness), which in turn positively affects feelings of harmony.  
105   In sum, these results are consistent with the SSHM. However, as acknowledged by Dambrun  
106   (2017), self-centeredness and selflessness would not only be related to evaluated happiness, but  
107   also to experienced happiness. The SSHM postulated that before being evaluated, self-  
108   centeredness and selflessness would be experienced in the first place. Thus, it would be important  
109   to examine the relationships between self-based psychological functioning (i.e., selflessness and  
110   self-centeredness) and happiness using a methodology that permits to assess these constructs at  
111   the experienced level rather than at the evaluated level. The experience sampling method (ESM)  
112   seems particularly appropriate in this regard.

### 113   **The Experience Sampling Method (ESM)**

114           This technique was introduced in its modern form by Csikszentmihalyi, Larson, and  
115   Prescott (1977) to avoid well-known biases of self-reporting questionnaires (i.e., recollection

116 biases, social desirability) and to assess experienced rather than evaluated psychological  
117 constructs (Csikszentmihalyi & Hunter, 2003; Kahneman & Riis, 2005). For example, the ESM  
118 reduces the bias associated with the recovery of memories and those involved in the development  
119 of global judgments (e.g., judgments based on the most accessible memories, see Kahneman,  
120 1999). In addition, the ESM provides time series that can permit inferences regarding temporal  
121 relationships (e.g., Steger, Kashdan, & Oishi, 2008). This technique also has good ecological  
122 validity since it is administered within the everyday life of individuals (Scollon, Kim-Prieto, &  
123 Diener, 2003). For all these reasons, the ESM is considered a gold standard for measuring  
124 subjective happiness (Scollon, 2018).

125         In a seminal ESM study, Csikszentmihalyi and Hunter (2003) assessed momentary  
126 experiences of happiness in adolescents and showed that their happiness was dependent on  
127 context. They were less happy when they participated in school activities or when they were  
128 alone, but were happier in their social or leisure activities, and in the presence of friends. In the  
129 same way, recent research also showed that the current context influences the experience of  
130 happiness (Choi, Catapano, & Choi, 2017; Killingsworth & Gilbert, 2010). However, no studies  
131 have yet explored the role of selflessness states in the experience of happiness. We designed an  
132 ESM study to fill this gap in the literature.

### 133 **The present study**

134         This paper aims to test the Selflessness/Self-centeredness Happiness Model (SSHM)  
135 assumptions at the experienced level using the ESM. In that manner, we were able to collect data  
136 about the participants' momentary experiences in their ecological context. Because ESM is  
137 intensive for participants, it is important to keep the number of questions asked at each time point  
138 to a minimum (Scollon, 2018). Therefore, this study was designed to take a first look at the

139 selflessness part of the model at the experienced level—the self-centered part of the model  
140 having been deliberately neglected. Note we were interested here in the associations between the  
141 variables at the within-person level only (i.e., at the experienced level), not at the between-person  
142 level. Therefore, the role of emotional stability will not be explored further in this paper, as this  
143 variable would only make sense at the between-person/trait level (see Jahng, Wood & Trull,  
144 2008, for operationalizations of emotional instability). Instead, we focus on the relationships  
145 between momentary experiences of selflessness, harmony, and happiness. This study was  
146 designed to investigate the contemporaneous relationships between variables; thus, temporal  
147 relationships will not be explored (see the discussion section about this issue).

148 Thus, we predict that both experienced selflessness (H1) and experienced harmony (H2)  
149 would be significantly and positively related to experienced happiness. We also predicted and  
150 tested a mediation model in which experienced harmony would mediate the relationship between  
151 experienced selflessness on experienced happiness (H3).

## 152 **Methods**

### 153 **Participants**

154 We recruited the 64 participants mostly through student social networks. They did not  
155 receive any compensation for their participation. The sample had a large majority of women  
156 (81%). Participants were aged from 18 to 62 years old ( $M = 26$ ,  $SD = 9$ ). Regarding education, 15  
157 participants declared having a High-School degree (23.5%), 6 having done two years following  
158 High-School (9.5 %), 19 having a Bachelor degree (30%), 12 having a Master's degree (19%), 10  
159 having completed graduate studies (15.5%) and 2 were post-graduate (3%). The large majority of  
160 participants considered themselves belonging to the middle class (78%). Two participants



161 considered themselves belonging in a very low social class (3%), 9 in a low class (14%), and 3 in  
162 a high class (5%). None marked themselves as belonging to a very high social class.

### 163 **Procedure**

164 We collected the data using the Experience Sampling Method (Csikszentmihalyi &  
165 Hunter, 2003; Csikszentmihalyi et al., 1977). The participants were asked (by SMS) to respond to  
166 a short online survey (i.e., Qualtrics questionnaire) using their smartphone five times a day  
167 during two consecutive weekdays (never during weekends) - i.e., 10 sendings per participant,  
168 leading to 640 text messages sent. We randomly assigned the sending time within each 2h30  
169 period - starting from 8 a.m. until 8:30 p.m. 515 complete cases were registered (response rate:  
170 80%). We removed cases where response duration was too long (>15min), or too close in time  
171 from the previous case (<30min), and cases where participants answered only once, leaving 483  
172 observations for 63 participants. Effects sizes from the study of Dambrun (2017) were .48 for the  
173 total effect of selflessness on happiness, .36 for the effect of harmony on happiness and .49 for  
174 the effect of selfless on harmony. Using the *simr* package for R (Green & MacLeod, 2016),  
175 power analyses showed that our design has a minimum of 98.10% chance to detect those effects.

### 176 **Material**

177 In each session, the participants had to answer several questions. Three items assessed  
178 selflessness (i.e., allo-inclusive identity, perceived body-boundaries salience, and oneness), two  
179 assessed authentic happiness (i.e., contentment and inner peace), and two assessed the feeling of  
180 being in harmony (i.e., with oneself, with others). The participants were asked to respond  
181 sincerely in accordance with their current feeling. The questions were randomized within the two  
182 blocks pertaining respectively to affects (i.e., contentment, inner peace, and emotional state) and  
183 other measures (i.e., allo-inclusive identity, perceived body boundaries, oneness, harmony with

184 oneself, and harmony with others). Other subjective dimensions not directly related to the present  
185 hypotheses were assessed and will not be presented here. Answers were registered by means of  
186 analogue scales ranging from 0 to 100. The median time for completing a session was 142  
187 seconds. To assess Cronbach's alpha reliability estimates, we used the *alpha* function provided in  
188 Huang (2017). It allows assessing reliable estimates at the within-person level using the  
189 Multilevel Confirmatory Factor Analysis (MCFA) framework (Geldhof, Preacher, & Zyphur,  
190 2014).

191         **Happiness.** The two items were derived from the Subjective Authentic-Durable  
192 Happiness Scale (SA-DHS, Dambrun et al., 2012), where respondents are asked to provide their  
193 “regular level of ...” followed by some target concept. We selected items from the SA-DHS  
194 because it assesses both contentment and inner peace dimensions that are both important markers  
195 for authentic-durable happiness (Dambrun et al., 2012). The adaptation for the ESM consisted in  
196 two items asking participants to provide their current level of “happiness” for the contentment  
197 dimension and of “inner peace” for the inner peace dimension. These two items were selected on  
198 the basis of their high loadings on their respective dimension (see Dambrun et al., 2012). The  
199 response scale ranged from “very low” (0) to “very high” (100). The within-person reliability for  
200 happiness assessed by the two items was moderately satisfactory ( $\alpha = .58$ ). Note that although  
201 the reliability estimate might be lower than the traditional acceptable criteria for trait measures,  
202 Nezlek (2017) suggested relaxing the standards for the state level reliability for two main reasons.  
203 First, fewer items leads to poorer reliability estimates (here the number of items per dimension is  
204 between 2 and 3). Second, the mixed method procedure such as used in this study addresses  
205 unreliability more completely than traditional multiple regression analyses. All pairs of responses  
206 were averaged into a single measure of experienced happiness.

207           **Selflessness.** Three items were used to assess selflessness: (a) the first item was derived  
208 from the allo-inclusive identity scale, which assesses the degree of connection with others and the  
209 natural world (Leary et al., 2008). The perception of the interconnected nature of the self is an  
210 important marker of selflessness in the SSHM (Dambrun & Ricard, 2011). Four couples of  
211 circles were shown. In each couple, a circle labeled “you” crossed another circle labeled “others,”  
212 with the level of overlap indicating the degree of connection between the two entities. The  
213 participants rated their perception of connection with others on a scale ranging from “no  
214 connection” (0) to “full connection” (100). (b) The second item was the “perceived body  
215 boundaries salience” single-item scale. Dambrun (2016) derived this item from the work of  
216 Ataria et al. (2015) according to which the more flexible the sense of boundaries is, the weaker  
217 the sense of the self, ownership, and agency becomes. The participants indicated their current  
218 perception of their body state using a visual analogue scale depicting their own body with  
219 boundaries varying from almost imperceptible (0) to extremely salient (100). (c) The third item  
220 assessed oneness (i.e., “At this moment, I feel the unity with everything”). This item was derived  
221 from the oneness component of the mystical orientation scale (Francis & Loudon, 2000). The  
222 feeling of oneness is a marker for unified consciousness and has been discussed and used as an  
223 important component of selflessness in a previous study (Dambrun et al., 2019). The within-  
224 person reliability for selflessness assessed by the three items was moderately satisfactory ( $\alpha =$   
225 .60). The three items were averaged into a single measure of experienced selflessness.

226           **Feeling of being in harmony.** To assess the feeling of harmony, we selected items from  
227 the “feeling of being in harmony” scale (Dambrun, 2017) because, to our knowledge, it is the  
228 only one which assesses the feeling of being in harmony (i.e. perceived affective harmony) rather  
229 than the cognitive component of harmony (i.e. perceived harmony, as done for example by Kjell

230 et al., 2016). We incorporated two items from the scale: (a) The first item assessed the feeling of  
231 harmony with oneself. The participant rated their agreement with the following statement: “At  
232 this moment I’m feeling in harmony with myself”; (b) The second item assessed the feeling of  
233 harmony with others using the statement: “At this moment I’m feeling in harmony with others.”  
234 Responses ranged from 0 (“not agree at all”) to 100 (“totally agree”). The within-person  
235 reliability for harmony assessed by the two items was satisfactory ( $\alpha = .68$ ). The two items were  
236 averaged into a single measure of harmony feeling.

237         However, because the three items, oneness, allo-inclusive identity and feeling of harmony  
238 with others, might appear to be conceptually very close, it was important to test for the structure  
239 of our theoretical measurement model before deciding to aggregate to the two items in a single  
240 harmony score. In our view, while the feeling of being in harmony with others captures an  
241 affective state (i.e., harmony feeling), oneness and allo-inclusive identity measures assess the  
242 perception of one’s identity interdependence with others and all things (i.e., selflessness). Thus,  
243 one could feel in harmony with someone without perceiving one’s own identity to be dependent  
244 on this person and vice versa. However, these items shared an inter- or extra-personal aspect, so  
245 people might tend to respond similarly to them only for that reason. This might be particularly  
246 true for the feeling in harmony with others and allo-inclusive identity items, which both  
247 emphasize the word “other” in their instructions. Therefore we intended to conduct a Multi-Level  
248 Factor Analysis (MCFA) before any further investigations. We hypothesized that a three  
249 dimensional model with all items loading on their respective latent factor (i.e., happiness,  
250 selflessness and feeling of harmony) would well fit the data, better than an alternative model  
251 where harmony with others would load on selflessness rather than on feeling of harmony. We

252 also expected that allowing a residual correlation between allo-inclusive identity and harmony  
253 with others would improve model fit.

## 254 **Data analysis**

255 We used R (R Core Team, 2017) for all our statistical analyses, and linear mixed models  
256 to test our hypotheses. Linear mixed models are particularly well fitted to ESM data because they  
257 tolerate that participants do not fill the same number of measure occasions. The mixed-effects  
258 modeling procedure is a variant of regression analysis using Maximum log-likelihood (ML) or  
259 restricted log-likelihood (REML) optimization rather than ordinary least squares. Consequently,  
260 data analyses do not depend on sphericity, as is the case in repeated measures ANOVA. Mixed-  
261 effects models were computed using the *lme4* package (Bates, Mächler, Bolker, & Walker,  
262 2015). For all models, the intercept was assumed as random (varying across persons), and a two-  
263 level variance structure (person and experience levels) was adopted. Thus, the models generated  
264 estimates indicating whether the outcome variables (e.g. “experienced happiness”) and their  
265 predictors (e.g. “experienced selflessness”) were related, positively or negatively, while  
266 controlling for the between-person variance. For regressions on continuous predictors, as is it the  
267 case here, the coefficient essentially represents how much the outcome variable changes for any  
268 unit change in the predictor. The significance of the relationship between variables is indicated by  
269 the significance of the predictor, assessed by a *t*-value. For each model, we compared two  
270 alternatives in terms of model fit: one which allowed slopes to vary across persons vs. the other  
271 that did not allow inter-individual variations. For all models, the two alternatives fitted the data  
272 very similarly, so we selected the more parsimonious models where slopes do not vary across  
273 persons. We report standardized estimates with the help of the *beta* function of the *reghelper*  
274 package (Hughes, 2018). We used the *mediation* package to perform the mediation analyses

275 (Tingley, Yamamoto, Hirose, Keele & Imai, 2014). The script and data that support the results  
276 can be found at [https://osf.io/bdjg3/?view\\_only=e7ea6b2dcd424fa2bc5c332e9da6d4f7](https://osf.io/bdjg3/?view_only=e7ea6b2dcd424fa2bc5c332e9da6d4f7).

## 277 **Results**

### 278 **Multi-Level Factor Analysis**

279 We conducted a Multi-Level Confirmatory Factor Analysis (MCFA) with the *lavaan*  
280 package (Rosseel, 2012) to assess the reliability of our measures and the validity of our  
281 hypothesized structural model. We followed the procedure described in Huang (2017) to fit a  
282 level-one MCFA with unbiased estimates using clustered data. Cutoff values  $> .95$  for CFI,  $< .08$   
283 for SRMR and  $< .06$  for RMSEA determined good model fits (Hu & Bentler, 1999). The first  
284 structural model, where all items loaded on their respective latent factor (i.e., happiness,  
285 selflessness, and harmony), did not fit the data very well,  $\chi^2 = 104.15$ ,  $df = 11$ ,  $p < .001$ ,  $CFI =$   
286  $.905$ ,  $RMSEA = .142$ ,  $SRMR = .059$ ,  $AIC = 7495.08$ . Also, the covariance matrix was not  
287 positive definite, as the standardized covariation between the selflessness and harmony latent  
288 constructs was greater than 1. Thus the model needed to be re-specified.

289 In an alternative model, covariations were added between manifest variables, oneness,  
290 allo-inclusive identity, and feeling of harmony with others. As explained earlier, these  
291 covariations were expected because all three items emphasize the inter- and extra-personal  
292 relationships. This second model converged and provided a good fit:  $\chi^2 = 24.84$ ,  $df = 8$ ,  $p = .001$ ,  
293  $CFI = .982$ ,  $RMSEA = .078$ ,  $SRMR = .036$ ,  $AIC = 7425.79$ . Feeling in harmony co-variated  
294 significantly with allo-inclusive identity ( $\beta = .31$ ,  $p < .001$ ) and with oneness ( $\beta = .10$ ,  $p < .001$ ).  
295 We also fitted another alternative model where feeling of harmony with others loaded on the  
296 selflessness factor (while keeping the residual covariation from the previous model). The fit of

297 this model was almost identical to the previous one:  $\chi^2 = 27.40$ ,  $df = 9$ ,  $p = .002$ ,  $CFI = .980$ ,  
 298  $RMSEA = .070$ ,  $SRMR = .037$ ,  $AIC = 7422.32$ . The  $\chi^2$  difference test was not statistically  
 299 significant :  $\Delta\chi^2 = 2.55$ ,  $p = .11$ .

300 Because we were unable to differentiate the two models empirically, we decided to select  
 301 the first model, which has theoretical support. Therefore we used the aggregated scores in our  
 302 analyses for happiness, harmony, and selflessness as described in the method section.

### 303 **Descriptive statistics**

304 Table 1 displays the descriptive statistics and the within-person correlation of the study  
 305 variables (person-mean centered). All the variables were moderately to strongly associated at a  
 306 given time point.

307 Table 1. *Means, standard deviations, and within-person correlations of happiness, feelings of*  
 308 *being in harmony, and selflessness.*

Variables	mean	Sd	Happiness	Harmony	Selflessness
Happiness	62.1	17.96	1.00		
Harmony	59.7	20.32	0.57*	1.00	
Selflessness	46.2	17.96	0.45*	0.69*	1.00

309 *Note.* 482 observations, 63 individuals; The variables have been person-mean centered to assess  
 310 within-person correlations; \*  $p < .001$ .

311 **Linear mixed models**

312           Then, to test our two hypotheses, we calculated two linear mixed models with happiness  
313 as the dependent variable. In Model 1, only selflessness was included as a predictor of happiness.  
314 Then, in Model 2, feelings of harmony was added as an additional predictor<sup>1</sup>.

315           Table 2 presents the estimates of the two contemporaneous models. In accordance with  
316 H1, Model 1 estimates show that the fixed-effect of selflessness on happiness is significantly  
317 positive. The more one experiences selflessness, the more happiness is likely to be experienced  
318 too. In agreement with H2, Model 2 estimates show that the fixed-effect of feeling of harmony on  
319 happiness is significantly positive. The effect of selflessness on happiness in Model 2 is no longer  
320 significant when controlling for feelings of harmony ( $p = .19$ ). According to H3, the indirect  
321 effect of selflessness on happiness by the feeling of being in harmony was significant and  
322 mediated 86% of the total effect ( $b = 0.40$ ,  $CI_{95\%} = [0.32, 0.48]$ ,  $p < .001$ ). Figure 1 depicts  
323 the result of the mediation analysis.

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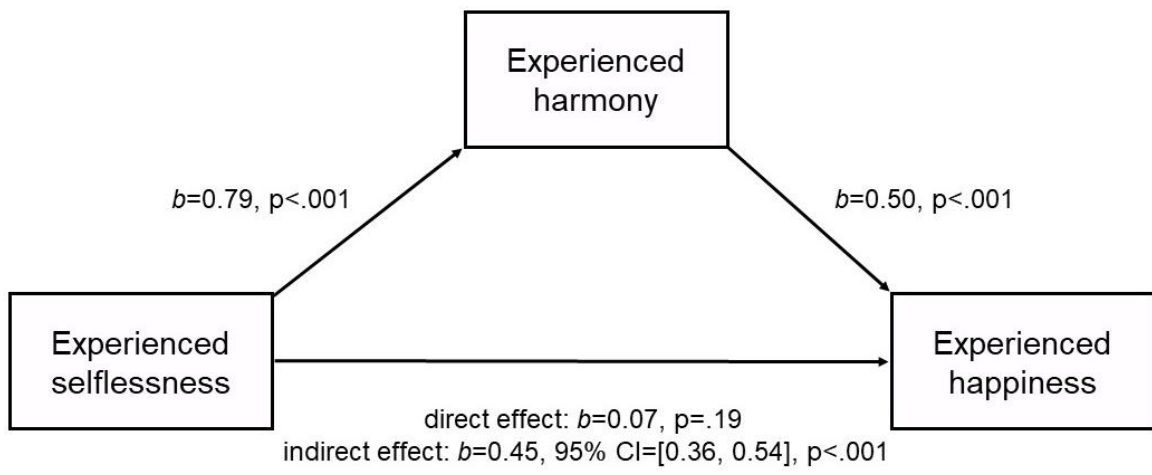
<sup>1</sup> Alternative models which included control variables such as age, education level and self-reported social class gave similar results.



328 Table 2. *Contemporaneous fixed effects on experienced happiness.*

Variable	Model 1				Model 2			
	<i>b</i>	SE	95% CIs	$\beta$	<i>b</i>	SE	95% CIs	$\beta$
Intercept	40.74*	2.39	[36.04; 45.43]		29.07*	2.27	[24.63; 33.51]	
Selfless	0.46*	0.04	[0.38; 0.54]	.46	0.07	0.05	[-0.03; 0.17]	.07
Harmony					0.50*	0.04	[0.42; 0.59]	.57

329 *Note.* 482 observations, 63 individuals; all variables were measured at the state level (within-  
 330 person estimates), except for age, gender, education level, and reported social class, which have  
 331 been measured at the person level (between-person estimates). *b* is for the unstandardized  
 332 estimates, SE the standard error of the fixed effects provided by the models, CIs the 95%  
 333 confidence intervals, and  $\beta$  the standardized estimates. \*  $p < .001$ .



334  
 335 Figure 1. Experienced feeling of being in harmony as a mediator of the relationship between  
 336 experienced selflessness and experienced happiness (Model 2).

## Discussion

337  
338           The objective of this study was to test the main assumptions of the Selflessness/Self-  
339 centeredness happiness model (SSHM) at the experienced level, using the Experience Sampling  
340 Method (ESM). Overall, we found large evidence for the contemporaneous relationships between  
341 the study variables in the expected direction. At a given point in time, experienced happiness was  
342 significantly and positively related to both experienced selflessness (H1) and experienced  
343 harmony (H2). Experienced harmony mediated 86% of the relationship between experienced  
344 selflessness and experienced happiness (H3). This corroborates the SSHM hypothesis, that the  
345 experience of selflessness is associated with the experience of inner peace and contentment, and  
346 that this positive relationship is explained by feeling harmony. However, the results here are  
347 correlational, so we cannot confirm the directionality of the effects. It could be that feelings of  
348 harmony influence both selflessness and happiness, or that a fourth factor influence all variables  
349 in the same direction. For example, as suggested by a reviewer, in times of high resources, a  
350 person would experience positive feelings and would also be less inclined to act for its own  
351 appropriation of resources (Hobfoll, 2002; Hobfoll, Halbesleben, Neveu, & Westman, 2018),  
352 thus being less self-centered. Also, it has been shown that experiencing positive emotions  
353 broadens the scope of attention and thought repertoire (Fredrickson, 2013), and that cognitive  
354 flexibility may influence the perception of the self. Therefore, it would be important to go further  
355 in this investigation by exploring the temporal relationships between the variables, to see which  
356 experience precedes the other.

357           The design of our study didn't allow us to investigate these dynamic relationships for two  
358 reasons. First, this study was designed for the investigation of contemporaneous relationships  
359 only. Studying the dynamics of variables would require much more statistical power. Second,

360 because the time lag between the measurement occasions influences the effect size that is  
361 captured by the models, the observed effect might be stronger with a shorter, or a longer, time  
362 interval between measurements (Kuiper & Ryan, 2018). Here, the mean elapsed time between  
363 two occasions used in the analyses was 170 minutes (excluding night intervals). However, the  
364 variables assessed are very dynamic by nature, and the time interval is often too long in intensive  
365 longitudinal studies (Sened, Lazarus, Gleason, Rafaeli, & Fleeson, 2018). For example, it seems  
366 unlikely that the lagged effect of the feeling of being in harmony on happiness would reach its  
367 peak in two hours or more, but rather much sooner. Thus, we expect the effects to peak within  
368 two hours or less, before declining rapidly. Future studies should investigate the temporal  
369 relationships using appropriate time intervals, and more generally to chose shorter time intervals  
370 in pilot studies for the evaluation of the optimal time lag (Dormann & Griffin, 2015).

371 Multi-level factor analysis supported a three-dimensional model, with happiness,  
372 selflessness, and feeling of harmony as latent factors. Our measurement model only fitted the  
373 data satisfyingly when residual covariations between feeling of harmony with others, oneness,  
374 and allo-inclusive identity items were freely estimated. An alternative model fitted the data very  
375 similarly to the previous one. In this alternative, feeling of harmony with others is loaded on the  
376 selflessness latent factor instead of harmony. Thus, it was not possible to make a clear  
377 demarcation between selflessness and feeling of harmony constructs based on our data. It might  
378 be possible to make this distinction by adding a few additional items to the latent factor of  
379 harmony. An alternative would be to assess harmony with a single item that omits reference to  
380 oneself or others (“At this moment, I’m feeling in harmony”).

381 In terms of the main limitation of this study, our sample was mainly French, female,  
382 young, and well-educated, for only 63 participants. This composition prevents the generalization

383 of our findings. Claiming that selflessness would generally contribute to human happiness would  
384 need the replication of these findings with larger samples, more representative in terms of age,  
385 economic, social and moral background, and more culturally diversified. Second, as a  
386 preliminary study on this issue, this study was limited in scope. We explored only one self-  
387 dimension of the SSHM, namely selflessness. On the other side, this paper opens promising  
388 perspectives with regard to further tests of the SSHM model at the experienced level. Using a  
389 similar methodology, future studies may examine the relationships between experienced self-  
390 centeredness, afflictive affects and fluctuating happiness. In addition, it will be interesting to  
391 challenge the SSHM with traditional happiness/resource-based models (Hobfoll, 2002). The  
392 SSHM would predict that selflessness might moderate the relationship between external events  
393 and happiness, reflecting emotional independence from external influences. Finally, recent  
394 studies (e.g., Dambrun, 2016; Dambrun et al., 2019) suggest that happiness and the specific  
395 components of self-consciousness such as the minimal and narrative self (Gallagher, 2013) are  
396 strongly intertwined. Using the ESM will be relevant to examine how changes in specific  
397 dimensions of self-consciousness co-vary —or not— with changes in happiness.

## 398 **Conclusion**

399 In this Experience Sampling study, we tested the main assumptions of the  
400 Selflessness/Self-Centeredness Happiness Model (SSHM) at the experienced level. The results  
401 confirmed that experienced happiness was significantly associated with experienced selflessness  
402 at a given moment and that this relationship might be explained by the feeling of being in  
403 harmony. Future studies should refine this understanding by exploring the temporal relationships  
404 between the variables. Finally, future research could test the second part of SSHM - the effect of

405 self-centeredness on the fluctuation of happiness. Despite some limitations, this study confirms a  
406 central aspect of SSHM; people's experience of happiness seems to be intimately linked to their  
407 self-based psychological functioning; here, selflessness. Overall, the study supports the idea that  
408 happiness does not depend solely on the satisfaction of one's expectations, but experiencing the  
409 self as an interdependent and relational entity also plays an important role.

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