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Running Head: LONGITUDINAL TRAJECTORIES OF SPORT EMOTIONS

Longitudinal Trajectories of Emotions among Young Athletes Involving in Intense Training

Centres: Do Emotional Intelligence and Emotional Regulation Matter?

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Conflict of Interest

All the authors declare that they have no conflict of interest.

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11 Abstract

12 *Objectives.* This study aimed to explore whether several subgroups of athletes representing
13 distinct emotional trajectories emerged from the person-centred analyses for a wide variety of
14 positive and negative sport emotions (anger, anxiety, sadness, confidence, happiness,
15 harmony, love and vitality). The present study also focused on the determinants of the
16 emotional dynamics exploring whether athletes reporting distinct scores of emotional
17 intelligence (EI) and emotional regulation (ER) at time 1 (T1) belonged to distinct
18 trajectories. *Design.* A longitudinal three-wave measurement design (beginning, middle, and
19 end of a competitive season) was used in the present study. *Method.* A sample of 325
20 adolescent athletes evolving in intensive training centres completed three self-reported
21 questionnaires. *Results.* Results of latent class growth analyses (LCGA) demonstrated four
22 trajectories for love and confidence, three trajectories for anger, harmony, happiness, sadness,
23 and vitality, and two trajectories for anxiety. Furthermore, the likelihood of belonging to
24 emotional trajectories was significantly influenced by EI and ER scores for love, confidence,
25 anger, harmony, happiness, sadness and vitality. *Conclusions.* LCGA results highlighted the
26 young athlete heterogeneity in longitudinal sport emotions and the predictive effects of ER
27 and EI on their emotional trajectories. These results could be used to help coaches and sport
28 psychologists to identify athletes at risk of developing dysfunctional emotional trajectories
29 across the competitive season. Moreover, this study suggested potential benefits of EI and
30 ER-centred interventions to help young elite athletes to experience adaptive emotional
31 trajectories. Finally, these results highlighted that the heterogeneity in sport emotions must be
32 accounted for in future research.

33

34 **Keywords:** Emotional intelligence; Emotional regulation; Latent class growth analysis; Sport
35 emotions; Young athletes.

36 Longitudinal Trajectories of Emotions among Young Athletes Involving in Intense Training
37 Centres: Do Emotional Intelligence and Emotional Regulation Matter?

38 There are a growing interest and an increase in the amount of research focusing on
39 emotions in sport psychology (Campo, Mellalieu, Ferrand, Martinent, & Rosnet, 2012; Cerin,
40 Szabo, Hunt, & Williams, 2000; Hanin, 2007). Emotions are central in a sport setting because
41 of their significant influence on performance and well-being (Hanin, 2007; Lazarus, 2000;
42 McCarthy, 2011). For instance, pleasant emotions (e.g. vitality, satisfaction) have been
43 associated to positive outcomes such as mental health, performance or engagement
44 (Lyubomirsky, King, & Diener, 2005; Riemer & Chelladurai, 1998) whereas unpleasant
45 emotions such as anxiety, anger, and depression have been associated to negative
46 consequences (e.g. athlete burnout) and/or positive consequences depending on the situation
47 and/or individual (Beedie, Terry, & Lane, 2000; Martinent, Ledos, Ferrand, Campo, &
48 Nicolas, 2015).

49 The Cognitive-Motivational-Relational theory (CMRT; Lazarus, 2000) postulates
50 that the experience of discrete emotions depends on the singular way an athlete appraises the
51 situation in which he is involved. In this perspective, emotion refers to an organized
52 psychophysiological reaction (subjective experience, facial expression, physiological
53 changes) to ongoing relationships with the environment reflecting the transaction between a
54 person and his environment (Lazarus, 2000). Previous studies have suggested that the
55 environment in which athletes are involved influences their emotional experiences (Campo et
56 al., 2012). Hence, intensive training centres could influence the emotions experienced by
57 young elite athletes because of the daily biological, social and psychological demands they
58 have to cope with and/or the **win-at-all-cost** atmosphere that can reign in these centres
59 (Martinent, Gareau, Lienhart, Nicaise, & Guillet-Descas, 2018). In contrast, other authors
60 have highlighted the facilitative role played by the sport competition context in the

61 development of a wide variety of transferable skills for young elite athletes (Gaudreau, Amiot,
62 & Vallerand, 2009). Consequently, being involved in an intensive training centre is not an
63 identical experience for all young elite athletes and different athletes could experience distinct
64 emotional trajectories across the competitive season (Gaudreau et al., 2009; Lazarus, 2000;
65 Martinent et al., 2018). Moreover, previous studies have provided evidence of the variability
66 of emotional experiences across the competitive season as the daily constraints and
67 competitive calendar can modulate athletes' emotional dynamics during the season (Cerin et
68 al., 2000; Gaudreau et al., 2009; Martinent et al., 2018).

69 Although athletes experience a wide variety of pleasant and unpleasant discrete
70 emotions in a sport setting (Hanin, 2007; Martinent, Campo, & Ferrand, 2012), previous
71 studies have historically focused on negative discrete emotions, especially on anxiety (Cerin
72 et al. 2000). However, in line with the development of positive psychology (Lyubomirsky,
73 King, & Diener, 2005), recent researches have provided evidence for considering both
74 positive and negative emotions because positive emotions do not simply refer to the absence
75 of negative ones and vice versa (Folkman, 2013; Lundqvist & Kenttä, 2010; McCarthy,
76 2011). Nevertheless, if some discrete emotions received considerable attention such as
77 anxiety, anger, or happiness (Cerin, 2004; Cerin et al., 2000; McCarthy, 2011), other are
78 currently poorly investigated in the sport context (e.g., love, harmony, vitality; Lundqvist &
79 Kenttä, 2010). Indeed, each discrete emotion could provide specific information (Lazarus,
80 2000) and complete knowledge about the emotional experience of individuals.

81 To take into account the dynamic and the heterogeneity of naturally-occurring
82 emotional trajectories emerging across the competitive season, researchers have to use a
83 methodological approach specifically designed to reveal subgroups of athletes belonging to
84 particular emotional trajectories (Laursen & Hoff, 2006). Longitudinal person-centred
85 methods such as Latent Class Growth Analyses (LCGA) are suitable to identify several

86 subgroups of athletes characterised by distinct emotional temporal patterns (or emotional
87 trajectories) (Rindfleisch, Malter, Ganesan, & Moorman, 2008). LCGA trajectories are
88 characterized by an intercept, a linear slope and a quadratic slope. The intercept refers to the
89 value at which a line cuts a coordinate axis which could be considered as low, moderate or
90 high. The slopes define the dynamics of a selected-variable across the measurement times.
91 The linear slope could be characterized as increasing (i.e. growing shape across the time),
92 decreasing (i.e. declining shape across the time) or stable (i.e. no change across time) whereas
93 the quadratic slope could be defined as positively unstable (i.e. U-shaped), negatively unstable
94 (i.e. inverted U-shaped) or stable (i.e. no change across time). The examination of emotional
95 trajectories across the competitive season could provide knowledge about the various
96 emotional responses to the daily constraints of competitive atmosphere across the season. This
97 approach could allow identifying some functional (i.e. theoretically associated to positive
98 outcomes) or dysfunctional (i.e. theoretically associated to negative outcomes) subgroups into
99 a global population. Thus, the emotional trajectories could be useful for both researchers and
100 practitioners in providing further insights regarding the longitudinal everyday emotional
101 experience. Yet only one study has already used such a methodology in sport psychology to
102 examine longitudinal trajectories of positive and negative affective states with a sample of
103 265 adolescent elite hockey players followed across 3 measurement points during the first 11
104 weeks of a season (Gaudreau et al., 2009). LCGA results have provided evidence for 3
105 trajectories of positive affect (medium and decreasing, high and decreasing, unstable) and 3
106 trajectories of negative affect (low and unstable, medium and unstable, high and decreasing).
107 Furthermore, athletes' memberships of trajectories of positive and negative affective states
108 have been predicted by theoretically driven predictors assessed at the start of the season such
109 as self-determination, need satisfaction, athletic identity, and school identity. These
110 preliminary results have suggested that multinomial heterogeneity in longitudinal affective

111 states needs to be accounted for in future research examining a wider range of unpleasant and
112 pleasant discrete emotions (Gaudreau et al., 2009). Moreover, emotional trajectories of
113 affective states have been based on a selected part of the competitive season (11 weeks) rather
114 than on the whole competitive season.

115 In addition to identify distinct naturally-occurring emotional trajectories of a wide
116 variety of unpleasant and pleasant emotions experienced by young athletes in intensive
117 training centres, it could be particularly useful to explore the determinants of those emotional
118 trajectories. In the present study, we focused on two individual-difference variables likely to
119 predict membership of athletes' emotional trajectories across the competitive season:
120 Emotional regulation (ER) and emotional intelligence (EI). ER refers to the process through
121 which individuals influence which emotions they experience, when and how they experience
122 and express them (Gross, 1998). Previous sport studies have shown that: (a) ER is linked to
123 sport performance as well as to athletes' emotional experience (Jones, 2003; Martinent et al.,
124 2015; Wagstaff, 2014); and (b) athletes use a wide variety of ER strategies to manage the
125 emotions experienced in competition (Martinent et al., 2015) and during training (Nicholls,
126 Holt, Polman, & Bloomfield, 2006). Extending CMRT (Lazarus, 2000), the process model of
127 emotion regulation (PMER) postulates that some ER strategies have an impact at different
128 stages of the emotion generation process (Gross & Thompson, 2007). PMER also helps to
129 structure the variety of ER strategies distinguishing two ER families: Antecedent-focused and
130 response-focused ER strategies. Antecedent-focused strategies act before the emotion
131 response tendencies become fully activated (early in the emotion-generative process). One of
132 the most investigated antecedent-focused ER strategies is reappraisal, which involves the
133 positive reinterpretation of threatening situations or highlighting the positive consequences of
134 emotion-eliciting situations (Gross & John, 2003; John & Gross, 2004). In line with CMRT, a
135 positive reappraisal is supposed to positively change cognitions about the situation and may

136 lead to high level of positive emotions and low level of negative ones (John & Gross, 2004).
137 In contrast, response-focused strategies are aimed at modifying emotional response tendencies
138 after they have already been triggered (Gross & Thompson, 2007). One of the most
139 investigated response-focused ER strategies is emotional suppression, which is designed to
140 influence behavioral emotion responses by suppressing the expressive emotion response
141 (Christophe, Antoine, Leroy, & Delelis, 2009). Previous studies conducted in general (Gross
142 & Thomson, 2007) and sport psychology (Martinent et al., 2015; Wagstaff, 2014) have
143 provided strong evidence that emotional suppression is accompanied by a heavy cognitive,
144 physiological, and social cost compared with reappraisal. Thus, the frequent and steady
145 repetition of this costly modulation of emotional responses could disturb the positive
146 emotions or foster the experience of negative emotions (John & Gross, 2004).

147 EI is another individual-difference variable examined in the present study which is
148 linked to emotional experience (Mayer, 2009). EI refers to the abilities to identify, understand,
149 regulate, and use one's and others' emotions (Davies, Lane, Devonport, & Scott, 2010;
150 Laborde, Dosseville, & Allen, 2016; Schutte, Malouff, Simunek, McKenley, & Hollander,
151 2002). A hierarchical structure of the concept of EI has been proposed, leading some
152 researchers to use a global score of EI (Laborde et al., 2016). In particular, a bulk of studies
153 have provided evidence that a global score of EI could be used by researchers and
154 practitioners as they simultaneously encompass all the aforementioned dimensions of EI
155 (Davies et al., 2010; Laborde et al., 2016). Based on the tenet of the CMRT (Lazarus, 2000),
156 the level of global EI could impact the appraisal of a competitive situation. This modification
157 of cognitive evaluation lead to positive or negative discrete emotions (Laborde et al., 2016).
158 More precisely, athletes characterised by low scores of EI experienced high levels of anger
159 and confusion whereas athletes characterised by high scores of EI reported low levels of
160 anger, confusion, depression, fatigue and tension and high levels of calm and joy (Laborde et

161 al. 2016). In the sport psychology literature, EI has been positively linked to athletes' pleasant
162 emotion and sport performance and negatively linked to unpleasant emotions in many sports
163 (Laborde et al., 2016). However, most of the previous studies have used a cross-sectional
164 design, preventing researcher to clearly disentangle the temporal ordering between EI and
165 emotions. Yet, in line with CMRT (Lazarus, 2000), we hypothesise that EI could predict the
166 incoming positive and negative emotions.

167 In sum, emotional experiences are a crucial aspect of competitive sport especially for
168 young elite athletes in intensive training centres as they are confronted with daily constraints.
169 Considering that the emotional process is fluctuant across time (Lazarus, 2000) and that all
170 young elite athletes do not necessarily experience the same emotions when involved in a
171 demanding environment (Martinent et al., 2018), a LCGA approach (longitudinal person-
172 centred method) seems suitable to examine longitudinal emotional trajectories of a wide
173 variety of pleasant and unpleasant discrete emotions. Thus, in the present study, we explored
174 whether several subgroups of athletes representing distinct emotional trajectories emerged
175 from LCGAs for a wide variety of sport emotions (anger, anxiety, sadness, confidence,
176 happiness, harmony, love and vitality). Furthermore, we examined whether athletes'
177 dispositional ER and EI scores at the beginning of the season would predict membership of
178 longitudinal emotional trajectories across the competitive season. Given that few studies
179 examined the trajectories of various discrete emotions over the competitive season, no
180 specific hypotheses were advanced regarding the number of trajectories, their characteristics
181 (e.g., intercepts) or their evolution through time (e.g., linear and/or quadratic slopes).
182 Concerning the relationships between ER, EI and longitudinal emotional trajectories, in line
183 with the process model of emotion regulation (Gross, 1998; Gross & Thompson, 2007),
184 CMRT (Lazarus, 2000) and empirical research (Davies et al., 2010; Gross & Jones, 2003;
185 John & Gross, 2004; Laborde et al., 2016; Martinent et al., 2015; Wagstaff, 2014), we

186 hypothesised that: (a) young athletes reporting higher levels of dispositional EI and
187 reappraisal would be more likely to belong to adaptive longitudinal emotional trajectories;
188 and (b) athletes reporting higher levels of dispositional emotional suppression would be more
189 likely to belong to maladaptive longitudinal emotional trajectories.

190 **Method**

191 **Participants**

192 A sample of three hundred and twenty-five youth athletes (122 females and 203 males,
193 aged 16.06 years \pm 1.59) in intensive training centres participated in the study. Athletes
194 practiced various team (basketball, soccer, rugby, handball, hockey, volleyball) and individual
195 sports (judo, dance, track and field, swimming, boxing, cycling, golf, gymnastics). They
196 participated in international (n = 11), national (n = 219) or regional (n = 95) sport
197 competitions. On average, they were invested in their sport for 8.12 years (\pm 3.37) and trained
198 12.38 h/week (\pm 3.33). Athlete's emotions scores were gathered in time 1 (T1) for 325
199 participants, in time 2 (T2) for 306 participants and in time 3 (T3) for 226 participants. The
200 main reasons for attrition were disease, training camp, injury, or competition.

201 **Measures**

202 The Multiple Emotions Measure (MEM, Martinent et al., 2018) was used to measure
203 emotions across the three measurement times. The MEM is a French questionnaire composed
204 of eight 4-items subscales measuring anxiety, love, confidence, anger, harmony, happiness,
205 sadness and vitality (Cronbach's α ranged from .76 to .87 for Martinent et al., 2018 and
206 ranged from .74 to .92 for the present study). Participants responded on a 5-point Likert scale
207 with values ranging from 1 (almost never) to 5 (most of the time).

208 The French version of the Brief Emotional Intelligence Scale (BEIS; Internal
209 consistencies provided by Davies et al., 2010: $\chi^2 = 180.78$, $p < .05$, Comparative Fit Index =
210 .91, Root Mean Square Error of Approximation = .06) was used to assess EI at the beginning

211 of the season. This scale, derived from the Emotional Intelligence Scale (EIS; Schutte et al.,
212 1998), is a short and efficient measure of trait-EI (Davies et al., 2010). This questionnaire
213 provides a global score of EI ($\alpha = .66$ for the present study) using 10 items focusing on
214 appraisal of own emotions, appraisal of others' emotions, regulation of own emotions,
215 regulation of others' emotions, and utilization of emotions. Participants responded on a 7-
216 point Likert type scale ranging from 1 (not at all agree) to 7 (completely agree).

217 The French version (Internal consistencies provided by Christophe et al., 2009: $X^2 =$
218 180.78, $p < .05$, Comparative Fit Index = .90, Root Mean Square Error of Approximation =
219 .05) of the Emotional Regulation Questionnaire (ERQ, Gross & John, 2003) was used to
220 measure dispositional reappraisal ($\alpha = .79$ for Gross & John, 2003; $\alpha = .83$ for the present
221 study; 6 items) and emotional suppression ($\alpha = .73$ for Gross & John, 2003; $\alpha = .72$ for the
222 present study; 4 items). Participants responded on a 7-point Likert type scale ranging from 1
223 (not at all agree) to 7 (completely agree).

224 **Procedure**

225 The present study was conducted according to the international ethical guidelines. The
226 heads of high school and the coaches of the training centres comprised in the study were
227 contacted before the data collection. The athletes' participation was voluntary. A written
228 informed consent was obtained before the beginning of the study. Their parents also informed
229 their contentment. Athletes completed the questionnaires during school courses or in their
230 usual training place. The BEIS and ERQ were completed only at T1 whereas we processed to
231 three measurement times for the MEM (T1, T2, and T3).

232 **Data analyses**

233 LCGAs were conducted on MPlus Version 7.3 (Los Angeles, CA, USA). We used the
234 full information maximum likelihood (FIML) estimation of missing data which is an unbiased
235 and more efficient method under the missing at random assumption than listwise deletion,

236 which could lead to biased parameters (Enders, 2010). LCGA is a statistical model which
237 posits that an underlying grouping variable can be inferred from a set of indicators to discover
238 distinct trajectories on a psychological variable with different patterns of change and stability
239 (Louvet, Gaudreau, Menaut, Genty, & Deneuve, 2009; Martinent, Louvet, & Decret, 2016).
240 As longitudinal factor invariance is a prerequisite when conducting such analyses, preliminary
241 analyses provided evidence for the strict temporal longitudinal invariance of MEM scores,
242 signifying that changes in emotion reflected the real changes of the athletes' emotions over
243 time without a bias interpretation due to temporal non-invariance.

244 Eight sets of analyses were performed, one for each discrete emotion. First, we
245 conducted a series of unconditional LCGA models to select a model that precisely captured
246 the shape and the number of the trajectories describing each of the emotions). Thus, a
247 succession of models with increasing number of trajectories was achieved to identify which
248 model was associated with the best-fit indices (Jung & Wickrama, 2008). We used a mixture
249 of statistical indices to determine the best-fitting model making up the log-likelihood value,
250 the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), the
251 Adjusted BIC (ABIC), and the Lo, Mendell, and Rubin likelihood ratio test (LRT). The
252 highest log-likelihood scores and the smallest values of AIC, BIC, and ABIC designated the
253 best-fitting model. Initial LCGA models included the mean level (intercept) and the linear and
254 quadratic growths for each trajectory. Then LCGA models with both linear and quadratic
255 functions were compared with their respective LCGA models with only the linear function.
256 The log likelihood ratio test allowed highlighting an eventual significant improvement of fit if
257 fewer parameters were included in the model (i.e., omitting quadratic functions from LCGA
258 models). Second, we examined whether EI and ER measured at T1 (i.e. beginning of the
259 season) could predict membership of emotional trajectories. Thus, EI and ER scores were
260 included as covariates of the selected models using the three-step model (Nylund-Gibson,

261 Grimm, Quirk, & Furlong, 2014). This approach fixes model parameters (intercept, linear
262 and/or quadratic slopes) of the several longitudinal emotional trajectories at the values from
263 the unconditional LCGA models. In other words, three-step models permitted to include the
264 covariates in the mixture models without that covariates alter class estimation (Asparouhov &
265 Muthén, 2014).

266 **Results**

267 **Unconditional LCGA Models**

268 Results of unconditional LCGAs are presented in Table 1. For love and confidence,
269 we observed big drops of AIC, BIC, and ABIC between 3 and 4 classes. Additionally, LRT
270 revealed that 4 classes fit better than 3 classes while 5 classes did not fit better than 4 classes
271 for introjected regulation. When comparing LCGA models, it is important to consider not
272 only the statistical indicators but also the substantive meaning of each of the emerging
273 trajectories when interpreting the LCGA results (Martinent et al., 2016). Thus, to achieve the
274 balance between theoretical and statistical considerations, we used the model parameters to
275 make sense of the classes and decide which model fits best. Based on the interpretability of
276 the emotional trajectories and statistical indicators, we selected a four-class solution for love
277 and confidence. For anger, harmony, happiness, sadness and vitality, the AIC, BIC, ABIC,
278 and LRT indicated that the 3-class models fit best. Specifically, there were big drops between
279 2 and 3 classes for the AIC, BIC and ABIC. LRT also revealed that 3 classes fit better than 2
280 classes while 4 classes did not fit better than 3 classes. Based on the interpretability of the
281 emotional trajectories (the three-class solutions made theoretical sense whereas a fourth
282 trajectory did not add anything substantive to the understanding of emotional trajectories) and
283 the LCGA statistical indicators, a three-class solution was selected for anger, harmony,
284 happiness, sadness, and vitality. For the anxiety, there were big drops of AIC, BIC, and ABIC
285 between 1 and 2 classes. Additionally, LRT revealed that 2 classes fit better than 1 class while

286 3 classes did not fit better than 2 classes for anxiety. A two-class solution was selected for
287 anxiety.

288 Moreover, it is worth noting that the LRTs indicated significant worsening of fit if
289 quadratic functions were omitted for love (LRT = 27.40, $\Delta df = 4$, $p < .001$), anxiety (LRT =
290 5.68, $\Delta df = 2$, $p = .05$), anger (LRT = 6.80, $\Delta df = 3$, $p = .05$), happiness (LRT = 13.41, $\Delta df =$
291 3, $p < .005$) and sadness (LRT = 12.37, $\Delta df = 3$, $p < .01$). Thus, both the linear and quadratic
292 parameters were selected for these emotions. However, for confidence, harmony, and vitality
293 (LRT = 6.59, 3.50, and 5.40 respectively, $\Delta df = 3$ or 4, $p > .10$), the LRT indicated non-
294 significant worsening of fit if quadratic functions were omitted. Thus, the linear parameters
295 were only selected for these emotions.

296 **Conditional LCGA Models with Covariates**

297 **Interpreting the Emotional Trajectories**

298 The trajectories' estimates for the conditioned LCGA models are presented in Table 2.
299 For love, the high-and-stable ($n = 181$) and moderate-and-stable ($n = 9$) subgroups
300 represented athletes who always experienced high (intercept = 3.86, $p < .01$, linear = $-.08$, $p =$
301 $.49$, quadratic = $.06$, $p = .21$) and moderate (intercept = 3.46, $p < .01$, linear = $-.67$, $p = .39$,
302 quadratic = $-.02$, $p = .96$) levels of love across the three time points. The high-and-unstable
303 group ($n = 33$) referred to high levels of love, a marginally positive linear function and a
304 negative quadratic function (intercept = 3.77, $p < .01$, linear = $.39$, $p = .08$, quadratic = $-.37$, p
305 $< .01$) whereas the very-high-and-unstable ($n = 102$) subgroup described athletes who
306 experienced very high level of love and a positive quadratic function (intercept = 4.47, $p <$
307 $.01$, linear = $-.15$, $p = .20$, quadratic = $.17$, $p < .01$). For confidence, the low-and-increasing (n
308 = 52), the moderate-and-increasing ($n = 11$) and the high-and-increasing ($n = 89$) subgroups
309 represented athletes who experienced low (intercept = 2.24, $p < .01$, linear = $.19$, $p = .05$),
310 moderate (intercept = 2.61, $p < .01$, linear = 1.06 , $p < .01$) and high (intercept = 4.37, $p <$

311 .01, linear = .15, $p = .02$) level of confidence (respectively) and a positive linear function. The
312 high-and-decreasing ($n = 173$) subgroup referred to high level of confidence and a marginally
313 negative linear function (intercept = 3.62, $p < .01$, linear = -.93, $p = .08$). For harmony, the
314 high-and-stable ($n = 145$), moderate-and-stable ($n = 166$) and low-and-stable ($n = 14$)
315 subgroups represented athletes who always experienced high (intercept = 4.30, $p < .01$, linear
316 = -.01, $p = .85$), moderate (intercept = 3.29, $p < .01$, linear = .05, $p = .32$), and low (intercept
317 = 1.88, $p < .01$, linear = .20, $p = .13$) levels of harmony across the measurement times. For
318 happiness, the very-high-and-decreasing ($n = 101$) subgroup referred to very high level of
319 happiness and a negative linear function (intercept = 4.69, $p < .01$, linear = -.43, $p = .01$,
320 quadratic = .13, $p = .13$) whereas the moderate-and-increasing ($n = 40$) subgroup represented
321 athletes who experienced moderate level of happiness and a positive linear function (intercept
322 = 2.66, $p < .01$, linear = .64, $p = .03$, quadratic = -.15, $p = .30$). The high-and-stable ($n = 180$)
323 subgroup represented athletes who always experienced high levels of happiness (intercept =
324 3.72, $p < .01$, linear = -.13, $p = .26$, quadratic = .07, $p = .25$). For vitality, the high-and-stable
325 ($n = 133$) subgroup represented athletes who always experienced high level of vitality
326 (intercept = 4.66, $p < .01$, linear = -.06, $p = .44$) across the season whereas the low-and-
327 increasing ($n = 27$) subgroup referred to low level of vitality and a positive linear function
328 (intercept = 2.75, $p < .01$, linear = .40, $p = .05$). The moderate-and-decreasing ($n = 165$)
329 subgroup described athletes who experienced moderate level of vitality and a marginally
330 negative linear function (intercept = 3.88, $p < .01$, linear = -.11, $p = .07$).

331 For anxiety, the moderate-and-unstable ($n = 130$) subgroup represented athletes who
332 experienced moderate level of anxiety, a marginally positive linear function and a marginally
333 negative quadratic function (intercept = 3.08, $p < .01$, linear = .42, $p = .06$, quadratic = -.19, p
334 = .09) whereas the low-and-stable ($n = 195$) subgroup referred to low level of anxiety across
335 the three measurement times (intercept = 1.88, $p < .01$, linear = .12, $p = .49$, quadratic = -.09,

336 $p = .28$). For anger, the moderate-and-stable ($n = 93$) subgroup represented athletes who
337 always experienced moderate level of anger across the season (intercept = 2.60, $p < .01$,
338 linear = -.20, $p = .59$, quadratic = .10, $p = .55$). The high-and-decreasing ($n = 22$) subgroup
339 described athletes who experienced high level of anger and a marginally negative linear
340 function (intercept = 3.87, $p < .01$, linear = -.88, $p = .07$, quadratic = .27, $p = .27$) whereas the
341 low-and-unstable ($n = 210$) subgroup referred to low level of anger, a positive linear function
342 and a negative quadratic function (intercept = 1.37, $p < .01$, linear = .47, $p < .01$, quadratic =
343 .18, $p = .01$). For sadness, the low-and-stable ($n = 241$) subgroup represented athletes who
344 always experienced low level of sadness (intercept = 1.33, $p < .01$, linear = .11, $p = .44$,
345 quadratic = -.03, $p = .72$). The high-and-unstable ($n = 33$) subgroup referred to high level of
346 sadness, a negative linear function and a positive quadratic function (intercept = 3.80, $p < .01$,
347 linear = -1.80, $p < .01$, quadratic = .68, $p < .01$) whereas the low-and-unstable ($n = 51$)
348 subgroup described athletes who experienced low level of sadness, a positive linear function
349 and a negative linear function (intercept = 1.77, $p < .01$, linear = 2.32, $p < .01$, quadratic = -
350 .93, $p < .01$).

351 **Effect of Emotional Intelligence and Emotional Regulation on Membership of** 352 **Emotional Trajectories**

353 The logistic regression coefficients highlighting the effects of EI and ER on
354 memberships of emotional trajectories are presented in Table 3¹. The likelihoods of belonging
355 to the high-and-stable and high-and-unstable trajectories of love – relative to the very-high-
356 and-unstable trajectory of love – were negatively related to T1 EI (ORs = .33 and .28
357 respectively, $p_s = .02$). The likelihoods of belonging to the high-and-decreasing and low-and-
358 increasing trajectories of confidence – relative to the high-and-increasing trajectory of

¹ We also computed a series of LCGA model in which EI, reappraisal, emotional suppression, and the interaction terms of EI x reappraisal and EI x emotional suppression were simultaneously included as predictors of emotional trajectories. Results revealed no significant results for the interaction terms. Therefore, the interaction terms were not included within the final conditional LCGA models.

359 confidence – were negatively related to T1 EI (ORs = .26 and .38, $p_s = .02$ and $.06$); the
360 likelihoods of belonging to the low-and-increasing trajectory of confidence – relative to the
361 high-and-increasing trajectory of confidence – were negatively related to T1 reappraisal (OR
362 = .64, $p = .04$). The likelihoods of belonging to the moderate-and-stable trajectory of harmony
363 – relative to the high-and-stable trajectory of harmony – were negatively related to T1
364 reappraisal (OR = .61, $p = .02$) and to T1 EI (OR = .14, $p < .01$). The likelihoods of
365 belonging to the low-and-stable trajectory of harmony – relative to the high-and-stable
366 trajectory of harmony – were negatively related to T1 reappraisal and marginally related to T1
367 emotional suppression (ORs = .45 and 1.59, $p_s = .00$ and $.08$). The likelihoods of belonging to
368 the moderate-and-increasing trajectory of happiness – relative to the very-high-and-decreasing
369 trajectory of happiness – were negatively related to T1 reappraisal and to T1 EI (ORs = .37
370 and .13, $p_s < .01$) and positively related to T1 emotional suppression (OR = .173, $p = .01$).
371 The likelihoods of belonging to the high-and-stable trajectory of happiness – relative to the
372 very-high-and-decreasing trajectory of happiness – were negatively related to T1 EI (OR =
373 .18, $p < .01$) and positively related to T1 emotional suppression (OR = .141, $p = .04$). The
374 likelihoods of belonging to the low-and-increasing trajectory of vitality – relative to the high-
375 and-stable trajectory of vitality – were negatively related to T1 reappraisal and T1 EI (ORs =
376 .53 and .26, $p_s = .01$). The likelihoods of belonging to the moderate-and-decreasing trajectory
377 of vitality – relative to the high-and-stable trajectory of vitality – were negatively related to
378 T1 reappraisal (OR = .65, $p = .01$) and positively related to T1 suppression (OR = 1.38, $p =$
379 $.04$).

380 The likelihoods of belonging to the low-and-unstable trajectory of anger – relative to
381 the high-and-decreasing trajectory of anger – were positively related to T1 reappraisal (OR =
382 1.61, $p = .03$). The likelihoods of belonging to the low-and-stable trajectory of sadness –
383 relative to the high-and-unstable trajectory of sadness – were negatively related to T1

384 emotional suppression ($OR = 1.49, p = .02$) and positively related to T1 reappraisal ($OR =$
385 $.70, p = .02$). The likelihoods of belonging to the low-and-unstable trajectory of sadness –
386 relative to the high-and-unstable trajectory of sadness – were positively related to T1
387 reappraisal ($OR = 1.68, p = .03$).

388

Discussion

389 The aim of the present study was to examine whether several subgroups of athletes
390 representing distinct longitudinal emotional trajectories emerged from LCGAs. A wide range
391 of discrete emotions (anger, anxiety, sadness, confidence, happiness, harmony, love, and
392 vitality) were investigated for a sample of young elite athletes involved in intensive training
393 settings followed across 3 measurement points during the competitive season (beginning,
394 middle and end of the sport season). We also explored whether dispositional **ER** and **EI** scores
395 reported by youth athletes at the beginning of the season would predict membership of
396 emerging longitudinal emotional trajectories across the competitive season. Results of LCGAs
397 revealed several distinct emotional trajectories for each of the eight discrete emotions. In
398 particular, four trajectories for love (very high and unstable, high and stable, high and
399 unstable, moderate and stable) and confidence (high and increasing, high and decreasing,
400 moderate and increasing, low and increasing), three trajectories for anger (high and
401 decreasing, moderate and stable, low and unstable), harmony (high and stable, moderate and
402 stable, low and stable), happiness (very high and decreasing, high and stable, moderate and
403 increasing), sadness (high and unstable, low and stable, low and unstable) and vitality (high
404 and stable, moderate and decreasing, low and increasing) and two trajectories for anxiety
405 (moderate and unstable, low and stable) emerged from the LCGAs. Thus, the results revealed
406 that each discrete emotion is characterised by a specific degree of interindividual variability.
407 For instance, in the present study, confidence experiences are particularly heterogeneous as
408 four classes emerged from the LCGAs whereas anxiety experiences could be captured with

409 only two subgroups. As a whole, these results provided evidence for the usefulness of
410 exploring several discrete emotions as distinct trajectories emerging for each of the eight
411 discrete emotions across the competitive season. Indeed, in line with CMRT, results of this
412 study suggested that each specific emotion “tell(s) a different story about a person’s
413 adaptational struggle” (Lazarus, 2000, pp. 232).

414 Confirming the results of Gaudreau et al.' (2009) study focusing on positive and
415 negative affective states, those of the present study demonstrated that it is useful to take into
416 account heterogeneity in longitudinal sport emotion across the competitive season for a wide
417 range of pleasant and unpleasant discrete emotions. Indeed, naturally-occurring emotional
418 regulation strategies emerging from the LCGAs highlighted both change (significant linear
419 and/or quadratic slopes) and stability at an intra-individual level of analysis for most of the
420 discrete emotions examined. Albeit with a different methodology, these results are consistent
421 with previous sport studies depicting a nomothetic-idiographic process for the construct of
422 emotion (Cerin, 2004; Martinent et al., 2012, 2018). Specifically, it is important to outline that
423 some but not all athletes have exhibited changes in their experience of discrete emotions
424 across time. For instance, several athletes experienced stable discrete emotions across the
425 three measurement times (beginning, middle, and end of the season) – 74% of athletes
426 belonged to stable trajectories for sadness, 60% for anxiety, 58% for love, 55% for happiness,
427 41% for vitality, and 29% for anger. These athletes do not seem really affected by the
428 intensive training environment and influenced by the competitive or personal events during
429 the season. For harmony, all athletes belonged to stable emotional trajectories (high and
430 stable, moderate and stable, or low and stable). Thus, we could considerate that this discrete
431 emotion has a little temporal variability during a competitive season. In contrast, all the
432 athletes exhibited changes of confidence across the season as the four emerging trajectories
433 for confidence were characterized by linear and/or quadratic changes across time (high and

434 increasing, high and decreasing, moderate and increasing, low and increasing). These changes
435 could refer to the consequences of the athletes' everyday life (Martinent et al., 2018). Indeed,
436 the individual response to the positive and negative competitive events or personal
437 experiences could lead to an increase or a decrease in emotional scores across the season. For
438 instance, the decreasing of positive emotions could be explained by the daily pressure and the
439 biological, psychological and social demands (Gaudreau et al., 2009).

440 Based on a theoretical background such as the broaden and built theory (Fredrickson,
441 2001) and on previous studies in sport psychology (McCarthy, 2011; Riemer & Chelladurai,
442 1998), some trajectories could be characterized as maladaptive (i.e. dysfunctional) whereas
443 other could be considered as adaptive (i.e. functional). Because low scores of dispositional
444 unpleasant emotions and high scores of dispositional pleasant emotions have been associated
445 with various positive outcomes (e.g., well-being, performance) and/or an absence of negative
446 ones (e.g., burnout) (Beedie et al., 2000; Campo et al., 2012; Martinent et al., 2016;
447 McCarthy, 2011), it seems reasonable to postulate that the high-and-stable trajectories of love,
448 harmony, vitality and happiness, the moderate-and-increasing and high-and-increasing
449 trajectories of confidence, and the low-and-stable trajectories of anxiety and sadness could be
450 conceptualized as functional emotional trajectories. In contrast, the moderate-and-decreasing
451 trajectory of vitality, low-and-stable trajectory of harmony, moderate-and-unstable trajectory
452 of anxiety and high and unstable trajectory of sadness could be conceptualized as
453 dysfunctional emotional trajectories. For other emotional trajectories (e.g., high-and-
454 decreasing trajectory of anger or low-and-increasing trajectory of confidence), it seems more
455 difficult to definitely characterize these trajectories as functional versus dysfunctional ones.
456 To unambiguously characterize such emerging emotional trajectories, upcoming research
457 could explore the effect of memberships of emotional trajectories on several distal outcomes
458 (e.g. performance, well-being, burnout) measured at the end of the season or several years

459 later. Nevertheless, the influence of dispositional ER and EI scores assessed at the beginning
460 of the season on membership of emotional trajectories across the competitive season could
461 provide preliminary information about the functional versus dysfunctional nature of emotional
462 trajectories in the context of the present study.

463 Results of LCGAs revealed that dispositional EI and ER scores at T1 significantly
464 predicted membership of emotional trajectories for love, anger, confidence, harmony,
465 happiness, sadness and vitality. In particular, young elite athletes reporting higher levels of
466 dispositional EI were more likely belonging to functional longitudinal emotional trajectories
467 compared with less functional longitudinal emotional trajectories. These results are in line
468 with previous studies focused on EI (Davies et al., 2010; Laborde et al., 2016) confirming the
469 positive influence of EI on emotions. Indeed, athletes characterised by high scores of EI at the
470 beginning of the season may use their abilities to overcome the daily constraints of the
471 competitive season. Specifically, in line with CMRT (Lazarus, 2000), a better identification,
472 understanding, regulation and use of emotions may modulate their appraisal of the
473 competitive experiences. These capacities to modify the cognitive evaluation of sport
474 situations may enable athletes to experience functional emotional trajectories during the
475 season. In the same way, athletes reporting higher scores of reappraisal were also more likely
476 belonging to functional longitudinal emotional trajectories confirming previous studies
477 focused on ER (John & Gross, 2004; Martinent et al., 2015). The young athletes who used
478 reappraisal strategies at the beginning of the season may positively change their cognitions
479 about the competitive situations. Thus, the ability to use positive reappraisal strategies seems
480 to promote functional emotional trajectories across the season. In contrast, young elite athletes
481 reporting higher levels of dispositional emotional suppression at T1 were more likely
482 belonging to dysfunctional longitudinal emotional trajectories compared with less
483 dysfunctional emotional trajectories. These results are in line with previous studies

484 highlighting the high cognitive, physiological and social cost of emotional regulation
485 compared with reappraisal (John & Gross, Wagstaff, 2014). Indeed, the recurrence of
486 suppression strategies may disturb the emotional experiences during the season and lead to
487 dysfunctional emotional trajectories. Overall, the results of LCGA are in line with the CMRT
488 confirming the role of EI and ER on cognitive appraisal and emotional experiences in a sport
489 setting (Davies et al., 2010; John & Gross, 2004; Laborde et al., 2016; Martinent et al., 2015).
490 Moreover, the present results highlight the temporal effect of EI and ER at the beginning of
491 the season on emotional trajectories across a competitive season.

492 These results could be used to help coaches and sport psychologists working with
493 adolescent athletes involved in intensive training centres. The methodological approach used
494 in this study could be useful to identify dysfunctional emotional trajectories and ultimately to
495 help the creation of targeted and adapted intervention to subgroups of young athletes involved
496 in intensive training centres. Knowing which form of ER (reappraisal versus emotional
497 suppression) and whether EI is related to which emotional trajectory is crucial to the
498 development of well-designed prevention and intervention program. Based on the premise
499 that emotional experience can be seen as a nomothetic-idiographic process (Cerin, 2004;
500 Martinent et al., 2018), sport psychologists could try to develop empirically-proven
501 interventions to help young athletes change their dysfunctional emotional trajectories and/or
502 stabilize their functional emotional trajectories over time to maximize their psychological
503 adjustment to the high demands inherent to the environment of intensive training centres.
504 Based on the LCGA results, interventions should be targeted toward young athletes reporting
505 low dispositional EI and reappraisal and/or high dispositional emotional suppression because
506 these young athletes were found to be the more at risk of developing dysfunctional emotional
507 trajectories across the competitive season. Based on the tripartite model of EI (Mikolajczak,
508 2009) and on previous empirical studies highlighting that it was possible to increase

509 dispositional EI scores (Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009), sport
510 psychologists could implement specific programs designed to enhance young athletes'
511 dispositional EI (e.g., increasing knowledge about emotions and emotion regulation, using
512 pre-competitive and intra-competitive routines; Campo, Laborde, & Weckemann, 2015).

513 The present research has some limitations that should be acknowledged. First, before
514 generalizing the findings, caution should be taken given the specificity of our population
515 (young athletes in intensive training settings). Second, the absence of distal outcomes
516 prevented us to unambiguously examine the functional versus dysfunctional nature of the
517 emerging emotional trajectories. Consequently, future studies should include several
518 outcomes variables in the study design, such as performance or well-being indicators. Third,
519 although a longitudinal design based on the competitive season was used in the present study,
520 sport career is longer than this time period. Indeed, the succession of competitive seasons
521 could help to describe other emotional trajectories. In this perspective, future studies should
522 extend the knowledge base about the longitudinal development of emotions in the sport
523 context in focusing on four competitive seasons (representing an Olympiad). Moreover, it is
524 noteworthy that EI and ER represent particular predictive factors in a multifactorial system
525 (e.g. motivation, training history) and it could be useful to explore the influence of other
526 factors in future studies to provide further insights on emotional experience in a sport context.

527 Despite these limitations, the present study furthered our knowledge base on sport
528 emotions by providing new insights on longitudinal everyday experience of eight discrete
529 emotions (love, anxiety, anger, confidence, harmony, happiness, sadness and vitality) with a
530 sample of young elite athletes involved in intensive training centres followed across 3
531 measurement points during the competitive season (beginning, middle and end of the sport
532 season). The person-centred method used in the present study highlighted that the
533 heterogeneity in longitudinal sport emotions needs to be accounted for to identify intra-

534 individual emotional trajectories experienced by athletes through the competitive season.
535 Moreover, results of LCGAs also demonstrated that dispositional EI and ER assessed at the
536 beginning of the season significantly predicted membership of longitudinal emotional
537 trajectories across the competitive season. In particular, EI and reappraisal predicted
538 belonging to functional emotional trajectories whereas emotional suppression predicted
539 belonging to dysfunctional emotional trajectories. These findings are interesting for sport
540 psychology because they help to target particular athletes at risk of developing dysfunctional
541 emotional trajectories across the competitive season.

542

Conflicts of interest

543

All the authors declare that they have no conflict of interest.

544

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Table 1. Fit Indices of Latent Class Growth Analysis Models With 1 – 6 Classes for Emotions.

	1 class	2 class	3 class	4 class	5 class	6 class
Love						
Log likelihood	-922.08	-867.34	-844.58	-824.87	-805.81	-823.22
AIC	1856.16	1754.67	1717.15	1685.74	1655.62	1698.44
BIC	1879.65	1793.83	17771.98	1756.23	1741.77	1800.27
ABIC	1860.62	1762.11	1727.56	1699.12	1672	1717.78
LRT	N/A ^a	109.49*	45.52	39.42*	38.12*	17.65
Anxiety						
Log likelihood	-1225.08	-1142.39	-1121.97	-1114.46	-1109.28	-1101.03
AIC	2462.15	2304.78	2271.95	2264.92	2262.56	2254.05
BIC	2485.65	2343.94	2326.77	2335.41	2348.72	2355.87
ABIC	2466.61	2312.22	2282.36	2278.30	2278.92	2273.38
LRT	N/A ^a	165.37*	40.83	15.03	10.35	16.51
Anger						
Log likelihood	-1135.29	-1038.81	-1014.54	-991.19	-997.61	-965.34
AIC	2282.57	2097.63	2057.09	2018.39	1999.21	1982.34
BIC	2306.07	2136.79	2111.92	2088.88	2085.37	2084.17
ABIC	2287.04	2105.06	2067.50	2031.77	2015.57	2001.68
LRT	N/A ^a	192.95*	48.54*	46.70*	27.17	24.87
Confidence (without including quadratic parameters)						
Log likelihood	-1202.70	-1127.51	-1105.03	-1083.94	-1070.04	-1069.88
AIC	2415.40	2271.01	2232.06	2195.89	2174.08	2179.77
BIC	2434.98	2302.34	2275.14	2250.71	2240.66	2258.09
ABIC	2419.11	2276.96	2240.24	2206.30	2186.72	2194.64
LRT	N/A ^a	150.38*	44.95	42.18*	27.81	0.31
Harmony (without including quadratic parameters)						
Log likelihood	-1079.97	-1011.62	-989.46	-979.98	-971.19	-963.82
AIC	2169.95	2039.24	2000.91	1987.95	1976.37	1867.64
BIC	2189.83	2070.57	2043.99	2042.78	2042.95	2045.96
ABIC	2173.66	2045.19	2009.09	4998.36	1989.01	1982.51
LRT	N/A ^a	136.71*	44.33*	18.96*	17.58	14.73
Happiness						
Log likelihood	-986.786	-926.63	-910.51	-902.20	-889.95	-880.87
AIC	1985.57	1873.25	1849.01	1840.41	1823.90	1813.74
BIC	2009.07	1912.42	1903.84	1910.90	1910.06	1915.56
ABIC	1990.03	1880.69	1859.42	1853.79	1840.26	1833.07
LRT	N/A ^a	120.32*	32.24*	16.61	24.50*	19.52
Sadness						
Log likelihood	-1142.90	-1017.79	-975.03	-953.47	-930.46	-912.75
AIC	2297.81	2055.57	1978.06	1942.95	1904.91	1877.49
BIC	2321.30	2094.74	2032.89	2013.44	1991.07	1979.31
ABIC	2302.27	2063.01	1988.47	1956.33	1921.27	1896.82
LRT	N/A ^a	250.23*	85.51*	43.12	46.04	35.42
Vitality (without including quadratic parameters)						
Log likelihood	-961.69	-900.40	-880.80	-868.54	-863.19	-854.80
AIC	1933.39	1816.80	1783.61	1765.09	1760.37	1749.59
BIC	1952.97	1848.13	1826.68	1819.92	1826.95	1827.92
ABIC	1937.11	1822.75	1791.78	1775.50	1773.01	1764.46
LRT	N/A ^a	122.59*	39.19*	24.52	12.97	8.89

Note: Bold entries reflect selected model. ^a Not available. * $p < 0.05$. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = Adjusted BIC; LRT = Lo, Mendell, and Rubin Likelihood Ratio Test.

Table 2. Longitudinal Trajectories of Emotions across the 3 Waves.

	<i>N</i>	Intercept		Linear		Quadratic	
		<i>Estimate (SE)</i>	<i>p</i>	<i>Estimate (SE)</i>	<i>p</i>	<i>Estimate (SE)</i>	<i>p</i>
Love							
High and stable	181	3.86 (.08)	.00	-0.08 (.11)	.49	0.06 (.05)	.21
Very high and unstable	102	4.47 (.05)	.00	-0.15 (.12)	.20	0.17 (.06)	.00
High and unstable	33	3.77 (.14)	.00	0.39 (.22)	.08	-0.37 (.10)	.00
Moderate and stable	9	3.46 (.32)	.00	-0.67 (.78)	.39	-0.02 (.33)	.96
Anxiety							
Moderate and unstable	130	3.08 (.18)	.00	0.42 (.22)	.06	-0.19 (.11)	.09
Low and stable	195	1.88 (.09)	.00	0.12 (.17)	.49	-0.09 (.09)	.28
Anger							
Moderate and stable	93	2.60 (.17)	.00	-0.20 (.38)	.59	0.10 (.16)	.55
High and decreasing	22	3.87 (.21)	.00	-0.88 (.49)	.07	0.27 (.25)	.27
Low and unstable	210	1.37 (.04)	.00	0.47 (.13)	.00	-0.18 (.06)	.01
Confidence							
High and decreasing	173	3.62 (.10)	.00	-0.93 (.05)	.08		
Low and increasing	52	2.24 (.15)	.00	0.19 (.10)	.05		
High and increasing	89	4.37 (.09)	.00	0.15 (.06)	.02		
Moderate and increasing	11	2.61 (.43)	.00	1.06 (.10)	.00		
Harmony							
High and stable	145	4.30 (.08)	.00	-0.01 (.05)	.85		
Moderate and stable	166	3.29 (.09)	.00	0.05 (.05)	.32		
Low and stable	14	1.88 (.17)	.00	0.20 (.13)	.13		
Happiness							
Very high and decreasing	101	4.69 (.06)	.00	-0.43 (.17)	.01	0.13 (.08)	.13
Moderate and increasing	40	2.66 (.13)	.00	0.64 (.30)	.03	-0.15 (.15)	.30
High and stable	180	3.72 (.06)	.00	-0.13 (.11)	.26	0.07 (.06)	.25
Sadness							
Low and stable	241	1.33 (.04)	.00	0.11 (.14)	.44	-0.03 (.07)	.72
High and unstable	33	3.80 (.14)	.00	-1.80 (.35)	.00	0.68 (.17)	.00
Low and unstable	51	1.77 (.15)	.00	2.32 (.51)	.00	-0.93 (.27)	.00
Vitality							
High and stable	133	4.66 (.05)	.00	-0.06 (.07)	.44		
Low and increasing	27	2.75 (.24)	.00	0.40 (.20)	.05		
Moderate and decreasing	165	3.88 (.10)	.00	-0.11 (.06)	.07		

Table 3. Association of Time 1 (T1) Emotional Regulation and Emotional Intelligence with Trajectories of Emotions.

Model	Estimate	Odds ratio	<i>P</i>
Love			
Trajectory: High and stable			
T1 Reappraisal	-.12	.89	.51
T1 Suppression	.23	1.26	.14
T1 Emotional Intelligence	-1.11	.33	.02
Trajectory: High and unstable			
T1 Reappraisal	-.09	.92	.65
T1 Suppression	.15	1.16	.39
T1 Emotional Intelligence	-1.28	.28	.02
Trajectory: Moderate and stable			
T1 Reappraisal	.16	1.17	.58
T1 Suppression	.26	1.30	.57
T1 Emotional Intelligence	-1.47	.23	.10
Trajectory: Very high and unstable (constant)			
Anxiety			
Trajectory: Low and stable			
T1 Reappraisal	.17	1.18	.23
T1 Suppression	-.17	.84	.18
T1 Emotional Intelligence	.10	1.10	.74
Trajectory: Moderate and unstable (constant)			
Anger			
Trajectory: Moderate and stable			
T1 Reappraisal	.32	1.38	.17
T1 Suppression	-.12	.89	.64
T1 Emotional Intelligence	-.64	.53	.17
Trajectory: Low and unstable			
T1 Reappraisal	.48	1.61	.03
T1 Suppression	-.33	.72	.11
T1 Emotional Intelligence	-.46	.63	.29
Trajectory: High and decreasing (constant)			
Confidence			
Trajectory: High and decreasing			
T1 Reappraisal	-.16	.85	.39
T1 Suppression	-.03	.97	.88
T1 Emotional Intelligence	-1.35	.26	.02
Trajectory: Low and increasing			
T1 Reappraisal	-.45	.64	.04
T1 Suppression	.13	1.14	.49
T1 Emotional Intelligence	-.96	.38	.06
Trajectory: Moderate and increasing			
T1 Reappraisal	.08	1.08	.94
T1 Suppression	.27	1.31	.62
T1 Emotional Intelligence	-1.80	.17	.13
Trajectory: High and increasing (constant)			
Harmony			

Trajectory: Moderate and stable			
T1 Reappraisal	-.49	.61	.02
T1 Suppression	.27	1.30	.16
T1 Emotional Intelligence	-1.96	.14	.00
Trajectory: Low and stable			
T1 Reappraisal	-.80	.45	.00
T1 Suppression	.46	1.59	.08
T1 Emotional Intelligence	-0.71	.49	.22
Trajectory: High and stable (constant)			
Happiness			
Trajectory: Moderate and increasing			
T1 Reappraisal	-1.00	.37	.00
T1 Suppression	.55	1.73	.01
T1 Emotional Intelligence	-2.08	.13	.00
Trajectory: High and stable			
T1 Reappraisal	-.26	.77	.10
T1 Suppression	.34	1.41	.04
T1 Emotional Intelligence	-1.73	.18	.00
Trajectory: Very high and decreasing (constant)			
Sadness			
Trajectory: Low and stable			
T1 Reappraisal	.40	1.49	.02
T1 Suppression	-.36	.70	.02
T1 Emotional Intelligence	-.30	.74	.41
Trajectory: Low and unstable			
T1 Reappraisal	.52	1.68	.03
T1 Suppression	-.22	.80	.36
T1 Emotional Intelligence	-.18	.84	.69
Trajectory: High and unstable (constant)			
Vitality			
Trajectory: Low and increasing			
T1 Reappraisal	-.64	.53	.01
T1 Suppression	.33	1.39	.16
T1 Emotional Intelligence	-1.35	.26	.01
Trajectory: Moderate and decreasing			
T1 Reappraisal	-.43	.65	.01
T1 Suppression	.32	1.38	.04
T1 Emotional Intelligence	-.65	.52	.11
Trajectory: High and stable (constant)			