



Swansea University
Prifysgol Abertawe



Cronfa - Swansea University Open Access Repository

This is an author produced version of a paper published in :
International Sports Coaching Journal

Cronfa URL for this paper:

<http://cronfa.swan.ac.uk/Record/cronfa20608>

Paper:

Rodgers, W., Knight, C., Selzler, A., Reade, I. & Ryan, G. Influence of performance enhancement and administrative tasks on coaches' stress and intentions to continue. *International Sports Coaching Journal*

This article is brought to you by Swansea University. Any person downloading material is agreeing to abide by the terms of the repository licence. Authors are personally responsible for adhering to publisher restrictions or conditions. When uploading content they are required to comply with their publisher agreement and the SHERPA RoMEO database to judge whether or not it is copyright safe to add this version of the paper to this repository.

<http://www.swansea.ac.uk/iss/researchsupport/cronfa-support/>

1 Running Head: Motivational Characteristics of Coaching Tasks

2

3

4

5

6

7

8

9

10 Influence of Performance Enhancement and Administrative Tasks on Coaches' Stress and

11 Intentions to Continue

12 Wendy M. Rodgers, Camilla J. Knight, Anne-Marie Selzler, Ian L. Reade & Gregory F. Ryan

13

14 This is the final version of a manuscript accepted for publication in the International Sport

15 Coaching Journal. Copyright for this manuscript is held by Human Kinetics. The final online

16 version will be available from: <http://journals.humankinetics.com/ISCJ>.

17

18

19

20

21

22

23

24

25 Abstract

26 The purposes of this study were to, (a) assess motivational experiences of performance
27 enhancement tasks (PET) and administrative tasks (AT), and; (b) examine the relationships of
28 emergent motivational experiences of each task type to coaches' perceived stress and intentions
29 to continue coaching. In total, 572 coaches completed an online survey, which assessed
30 autonomy, competence, relatedness, and other characteristics of PET and AT, intentions to
31 continue coaching, and perceived stress. Two separate exploratory factor analyses (EFA) were
32 conducted, one for AT and one for PET. This was followed up with CFA and SEM to examine
33 relationships between emerging factors and stress and intentions. The factors generated for PET
34 reflected ideas of autonomy, time conflict, and satisfaction, and for AT also included
35 competence, effort, and job requirements. The resulting experiences of AT and PET appear to
36 have different influences on stress and intentions, suggesting their distinction will be important
37 in future work examining coach retention.

38

39 Key Words: Coaches, Self-determination Theory, Basic Needs, Motivation, Stress, Quitting

40 Influence of Performance Enhancement and Administrative Tasks on Coaches' Stress and
41 Intentions to Continue

42 In the context of competitive sport, extensive research has examined the actions and
43 behaviors of athletes, and the consequences associated with behavioral engagement in terms of
44 motivational consequences (e.g., Lonsdale & Hodge, 2011; Lonsdale, Hodge, & Rose, 2009).
45 Factors that influence athletes' motivation, such as coach and parent behaviors, have also been
46 widely examined (e.g., Banak, Sabiston, & Bloom, 2011; Keegan, Harwood, Spray & Lavalley,
47 2009). In contrast, far less attention has been given to understanding influences on coach
48 motivation, leading to a number of coaching scholars calling for increased research in this area
49 (Vallerand, 2008; McLean, Mallett, & Newcombe, 2012).

50 Understanding how daily behaviors influence coaches' motivation, and subsequently
51 their well-being and satisfaction may help to explain why coaches leave the coaching profession
52 (Jowett, 2008; McLean et al., 2013). Additionally, coaches' motivation can also alter their
53 interactions and relationships with athletes (McLean et al., 2013). Coaches' behaviors have
54 consistently been shown to affect athletes' motivation, overall sport experiences, and their
55 physical and psychological development (e.g., Bartholomew, Ntoumanis, & Thogersen-
56 Ntoumanis, 2009; Boyce, Gano-Overway, & Campbell, 2009; Gillet, Vallerand, Amoura, &
57 Baldes, 2010). Understanding factors that influence coaches' stress and intentions to continue
58 coaching will help to provide information that can be used to enhance coach education, clarify
59 coaches' job expectations, increase coach retention, and increase the extent to which coaches
60 display positive coaching behaviors (Amorose, 2007; Stebbings, Taylor, Spray, & Ntoumanis,
61 2012).

62

63 Research to date has tended to address ‘coaching’ as a singular vocation, and has not
64 addressed the specific and complex tasks that have been identified as comprising coaching
65 (McLean & Mallett, 2011; Washington & Reade, 2013). When considering the role of the coach,
66 it is apparent that coaches are required to complete a range of tasks within their job (Potrac,
67 Brewer, Jones, Armour, & Hoff, 2000). It has been identified that coaches’ jobs are not limited
68 to performance enhancement tasks (PET) – (i.e., tasks that are specifically related to enhancing
69 their athletes’ sporting performance such as planning physical training, coaching technical skills
70 in practice, or coaching in competition). Rather, coaches are also often required to complete
71 administrative tasks (AT), such as planning travel, handling budgets and accounting, or ordering
72 equipment (Washington & Reade, 2013). One reason to explore different types of coaching tasks
73 is to better understand motivational consequences of the tasks. The coaching literature is
74 consistent in describing the difficult work context, extensive work hours, and poor work life
75 balance that leads to stress and burnout (e.g., Fletcher & Scott, 2010; Goodger, Gorely, Lavallee,
76 & Harwood, 2009; Knight, Reade, Selzler, & Rodgers, 2013). Given the range of tasks involved
77 in coaching, it is possible that examining the motivational experiences of performing different
78 tasks might shed light on how different aspects of coaching contribute to coaches’ psychological
79 well-being and intentions to continue coaching, and that a more nuanced approach to studying
80 coaching as a career is necessary.

81 One theoretical approach that might be useful in this exploration is self-determination
82 theory (SDT; Deci & Ryan, 1991; Ryan & Deci, 2002). SDT proposes a model of the self in
83 which people are active organisms with innate tendencies toward growth in social contexts as a
84 foundation for creating a coherent sense of well-being. The self is seen as an active agent in an
85 ongoing process of integration of the cultural and environmental inputs. As such, the degree of

86 self-determination in performance of various behaviors can influence personal growth and the
87 quality of overall experiences.

88 The value of distinguishing occupational tasks to understand motivation and job
89 intentions is apparent in research conducted in other domains. For example, research examining
90 the motivation of teachers has highlighted a difference between the motivational underpinnings
91 for completing tasks that can be described as administrative rather than actual teaching tasks
92 (Fernet, Senécal, Guay, Marsh, & Dowson, 2008). Fernet and colleagues (2008) identified
93 different motivational processes underpinning class preparation, teaching, evaluation of students,
94 classroom management, administrative tasks (including meetings with parents and other staff)
95 and complementary tasks (such as extracurricular activities, committees). Specifically, it
96 emerged that these different tasks had varying degrees of self-determined motivational
97 underpinnings and there were different levels of self-determined motivation between teachers
98 working in different settings.

99 Further, although PET and AT have not been specifically examined relative to coach
100 motivation, some research has pointed to the potential influence these task types might have on
101 coach retention and satisfaction. McLean and Mallett (2011) identified reasons why coaches
102 coached. They identified factors including being connected to the sport, aiding the development
103 of athletes, external influences such as a desire to win, and internal influences such as the
104 intrinsic love of the sport. Taken together, these reasons appear to indicate that coaches coach to
105 engage in and perform PET. In contrast, AT may be less satisfying because, arguably,
106 performing AT were not the primary reasons coaches took up their careers. As Washington and
107 Reade (2013) suggested, the increased expectations of coaches to be managers, in addition to
108 their main contributions in improving athlete performance, may increase perceptions of stress

132 Participants

133 The study was conducted with high-performance coaches working with a population
134 comprising university, college, Canada Games, and nationally funded athletes. A total of 572
135 coaches provided sufficient data for the analyses reported here, with 520 providing complete data
136 for the factor analyses. Due to the sample size, we chose not to impute or replace missing data.
137 The differential n for the two types of analysis revealed the need for responses to every single
138 item for factor analysis. For aggregate variables, some missing data are tolerated through the
139 aggregation process (the mean can be computed on the scores available even if one is missing),
140 preserving more individuals in the analysis. Nearly 45% of the participants were Canadian
141 Interuniversity Sport (CIS) coaches, 23% were Canadian Collegiate Athletic Association
142 (CCAA) coaches, 56% were club coaches, 29 % were national team coaches, 48% were
143 provincial team coaches, and 5.7% were self-employed coaches¹. Less than half (47.2%) of the
144 respondents had only one coaching position (31% had two, and 22% had more than two). The
145 coaches represented 56 sports with 37.8% in individual sports and 62.2% in team sports.
146 Basketball, volleyball, soccer, and ice hockey were the most common team sports (about 42% of
147 the overall responses), with other team sports such as lacrosse, ringette, rugby, and curling also
148 included within a list of 17 team sports. A total of 39 individual sports were represented with the
149 most common being swimming, track and field, golf and figure skating (15% of the overall
150 responses).

151 The age range of participants was 24 – 70 years, with an average of 44 years. Of the 572
152 participants, 25% were female and 75% were male. The majority of coaches (71.2%) reported
153 being married or in a marriage-like relationship. Half of the coaches in this study had

¹ These percentages total over 100% because some participants indicated coaching over a number of different settings.

154 competitive experience at the national (35%) or international (27%) level. Overall, 56.7% of the
155 participants had completed Level 3 (of 5) in Canada's National Coaching Certification Program.
156 Seventy five percent of the respondents had an undergraduate degree or postgraduate degree
157 (higher than the national average).

158 **Procedure**

159 Prior to data collection, an institutional research ethics board approved all procedures.
160 Permission was then received from the Coaching Association of Canada to access the email
161 addresses of the coaches in their coaching database. All coaches were sent an email inviting them
162 to participate in the study. The initial email included a description of the study and a hyperlink to
163 an informed consent document and questionnaire. Consenting coaches agreed to participate by
164 clicking the appropriate button that opened the web-based questionnaire. The response rate was
165 43% of coaches in our target population.

166 **Development of Items Assessing Performance and Administrative Tasks**

167 As part of a larger exploratory study (including other assessments), questions were
168 developed to consider aspects of motivation broadly reflecting components of SDT. Basic
169 psychological needs theory was used to guide the development of items due to previous literature
170 showing the importance of needs satisfaction on overall well-being and behavioral persistence. It
171 was decided to develop a broad array of items to allow for the probability of complexity in the
172 motivational experiences associated with each task set. That is, although, anecdotally, most
173 coaches would suggest that AT are unappealing tasks, that might be only in contrast with PET
174 and it is possible that some coaches enjoy performing some AT. It was also unknown whether
175 PET and AT would be distinguishable at all in motivational terms. A team of researchers
176 including professors, graduate students, and current or former high-performance athletes and

177 coaches developed the proposed items. These items were developed in consideration of previous
178 literature and athletes' and coaches' experiences in the coaching environment. Once the items
179 had been developed, the same group conducted a preliminary assessment of the items.

180 To ensure the items that were developed were relevant to coaches' experiences, it was
181 deemed particularly important to include coaches in the process of developing them. This was a
182 collaborative process. One of the higher level purposes of the research was to study the status of
183 coaches in Canada. From a pure academic perspective, research and practitioner collaborations
184 can be challenging to negotiate. In this process the coaches involved in the consultation took
185 exception to being asked about competence for PET, and they felt the questions were likely to
186 result in losing respondent confidence in the credibility of the study. In short, they unanimously
187 regarded the questions as 'stupid'. Therefore, to preserve the opportunity to investigate other
188 aspects of the tasks, those questions were dropped. Consequently, more aspects of AT are
189 addressed than PET.

190 A series of 21 items were developed to assess the motivational experiences associated
191 with AT, and a further 12 items were developed to assess the motivational experiences
192 associated with PET. The items, their means, and standard deviations are presented in Table 1.
193 The resulting items were subjected to exploratory factor analysis (EFA) to search for any
194 patterns that might represent a structure for understanding the motivational experiences of PET
195 and AT respectively. A successful EFA was to be followed up with a structural modeling
196 approach to CFA addressing both tasks simultaneously, and then examining relationships with
197 stress and intentions.

198 Intention to continue coaching was assessed with a single item: "How much longer do
199 you intend to coach?" Response format included 6 choices ranging from <2 years, 2-4 years, 4-6

200 years, 6-8 years, over 8 years and not sure. (Those responding ‘not sure’ were excluded from
201 analyses considering this variable). A second question asked “How much longer to you plan to
202 remain in this [*current*] position” with the same responses.

203 Perceived stress was assessed with the 10-item Perceived Stress Scale (Cohen, Kamarck,
204 & Mermelstein, 1983). Questions included, “In the last month, how often have you been upset
205 because of something that happened unexpectedly?” and “In the last month, how often have you
206 felt that you were unable to control the important things in your life?” Responses were on a 5-
207 point Likert scale from 0 (Almost never) to 4 (Very often). Cohen et al. (1983) reported internal
208 consistency $>.8$ for all scales, and theoretically expected relationships with depressive symptoms,
209 physical symptoms, as well as increased likelihood of seeking health care among students who
210 had completed the questionnaire, suggesting clinical influence. This instrument was deemed to
211 be appropriate in view of the concerns about work-life balance among coaches (Knight et al., in
212 press).

213 **Analysis and Results**

214 **Exploratory Analysis of Evidence for Motivational Structure**

215 To look for any pattern of motivational experiences with PET and AT, two separate
216 exploratory factor analyses (EFA) were conducted, one for AT and one for PET. Several items
217 were reverse scored to address wording contrary to the majority of items. These are marked with
218 an asterisk in the tables. The data analysis proceeded in stages. First, the descriptive statistics
219 associated with the items were examined for suitability for EFA. Second, principal components
220 analysis (PCA) was conducted with direct oblimin transformation ($\delta=0$) to reduce the items
221 to a smaller number of interpretable factors. The number of factors was determined by joint
222 consideration of the Kaiser-Guttman rule (eigenvalues >1.0) and Cattell’s (1978) scree plot.

223 Thurstone's principle of simple structure using a pattern coefficient of $|0.3|$ as the lower bound of
224 meaningfulness per factor and interpretability of the solution and parallel analysis were used to
225 determine the final solution. Finally, internal consistency estimates (Cronbach's alpha, 1951)
226 were calculated for the items comprising factors retained in the EFA solution.

227 Table 1 shows the factor loadings and other descriptive statistics for PET. Three
228 interpretable factors were extracted accounting for 64.52% of the variance with eigenvalues of
229 3.80, 2.62, and 1.33 respectively. These three factors were interpretable as: "personal
230 satisfaction," "time conflict," and "autonomy." For PET, Cronbach's alphas were acceptable for
231 personal satisfaction and for time conflict. The descriptive statistics for each of the factors
232 reported in Table 1 reflect these final item groupings subsequent to the reliability analysis.

233 Table 2 shows the results for the AT. Six interpretable factors were extracted accounting
234 for 65.45% of the variance, with eigenvalues of 5.20, 2.95, 1.92, 1.46, 1.20, and 1.00
235 respectively. These six factors can be interpreted as: "personal satisfaction," "time conflicts,"
236 "effort/pride," "autonomy," "competence," and "job requirements." For the AT factors,
237 Cronbach's alphas were also acceptable. Summary statistics are presented in Table 2.

238 **Confirmatory Factor Analysis of PET and AT Factors Together**

239 Structural equation models (SEM) were conducted in Mplus 7 (Muthen & Muthen 2012),
240 using the full information maximum likelihood (FIML) method to estimate model parameters.
241 FIML estimation uses all available data for each variable to generate parameter estimates; it does
242 not delete incomplete cases, resulting in parameter estimation based on all cases (Kline, 2011).
243 Data was available for 556 cases from which the analyses were conducted.

244 First a CFA model (i.e., measurement model) was conducted to confirm the latent factor
245 structure from the EFA analyses. The initial testing of the CFA model resulted in the deletion of

246 four items due to low factor loadings and face validity of the items in consideration of the latent
247 factor. For AT satisfaction, “Of all the things I do in my job, performing the administrative tasks
248 is what I do best” was removed. For AT effort, “I try to do the administrative tasks to the best of
249 my ability,” was removed. For AT and PET time conflict, “There is sufficient time in my weekly
250 schedule to focus on tasks that relate directly to the administration/performance-enhancement
251 training of my athletes/team,” were removed. The model fit indices for the final CFA model (N =
252 556) were as follows: $\chi^2 = 757.49$, $p = .000$; RMSEA = .05 (.04 - .05); CFI = .93, SRMR = .06.
253 Figure 1 shows the final CFA measurement model and standardized estimates. Correlations
254 among the emergent factors are provided in Table 3.

255 **Relationship of Emergent Structural Factors to Stress and Intentions**

256 Next, three structural models assessed the contribution of AT and PET motivational
257 characteristics on PSS, intentions to continue coaching, and intentions to continue in their current
258 position, respectively. Separate structural models were conducted because of low correlations
259 between PSS and intentions. PSS and intention variables were regressed on all latent factors:
260 PET autonomy, PET Satisfaction, PET time constraints, AT time constraints, AT effort, AT
261 autonomy, AT competence, AT satisfaction, AT job requirements. Table 4 displays the
262 standardized estimates for the structural models. Significant positive predictors of coaches’
263 perceived stress were AT time constraints and AT job requirements. AT competence was
264 significantly negatively associated with stress. This model accounted for 31% of the variance
265 perceived stress, $\chi^2 = 785.71$, $p = .000$; RMSEA = .05 (.04 - .05); CFI = .93, SRMR = .06.
266 Significant positive predictors of intentions to continue coaching were PET satisfaction, AT time
267 constraints, and AT autonomy. AT competence was significantly negatively associated with
268 intentions to continue coaching. This model accounted for 9% of the variance of intentions to

269 continue coaching, $\chi^2 = 790.79$, $p = .000$; RMSEA = .04 (.03 - .05); CFI = .93, SRMR = .06. One
270 significant positive predictor of intentions to continue in this position was identified: PET
271 satisfaction. This model accounted for 3% of the variance of intentions to continue in this
272 position. $\chi^2 = 822.33$, $p = .000$; RMSEA = .04 (.04 - .05); CFI = .92, SRMR = .06.

273 **Discussion**

274 The purposes of this paper were, (a) to assess motivational experiences of performance
275 enhancement tasks (PET) and administrative tasks (AT), and; (b) to examine the relationships of
276 emergent motivational experiences of each task type to coaches' perceived stress and intentions
277 to continue coaching. To accomplish these purposes, first, a set of items depicting possible
278 motivational characteristics for each set of tasks were developed preliminarily and assessed in
279 terms of motivational implications by EFA (separately) followed by CFA (simultaneously).
280 Second, the relationships between the resulting factors and the three dependent variables of
281 interest were assessed using SEM.

282 Three factors were generated for motivational experiences of PET reflecting the ideas of
283 autonomy, time conflict, and satisfaction, and six factors were generated for motivational
284 experiences of AT additionally including competence, effort, and job requirements. The CFA
285 supported the idea that AT and PET comprise different aspects of coaching, and that
286 characteristics of each task set differentially relate to stress and to a lesser extent to intentions to
287 continue coaching.

288 The findings of this study are consistent with SDT. However, the resulting factors
289 describing PET and AT, although informed by psychological needs theory, did not reproduce
290 factors representing the psychological needs exactly. Of course, in the case of PET, a priori
291 constraints prevented the emergence of competence. However, autonomy did emerge for both

292 PET and AT. The other factors seem more related to consequences of the tasks (e.g., satisfaction)
293 and might reflect behavioral regulations. Behavioral regulations were not assessed in this study.
294 But, the results suggest that although PET and AT are clearly separable, the reasons for their
295 performance probably have to be considered separately from the consequences of their
296 performance. Recently, Prentice, Halusic, and Sheldon (2014) have proposed that needs can
297 serve both as requirements and as motives. In particular, the current results support the idea that
298 people do not feel good or thrive when the basic experiences are not met, possibly resulting
299 stress and intentions to seek other experiences.

300 Generally, acceptable factor structures underpinning the motivational characteristics of
301 AT and PET were discovered that link well to self-determination theory. This allows for the
302 comparison of the quality of the motivation for performing each type of coaching task, and it can
303 be seen that satisfaction and autonomy are higher for PET and time conflict is lower than for AT.
304 For AT, effort and competence scores are high, suggesting that coaches feel prepared to engage
305 in AT, so AT are not posing an unreasonable challenge to them, but the satisfaction associated
306 with AT is much lower than for PET. Furthermore, AT competence is negatively related with
307 perceived stress and intentions to continue, providing some novel evidence of complex
308 motivational influences and effects of these tasks. SDT proposes that contexts that facilitate
309 satisfaction of basic needs will increase satisfaction and produce more effort on a task (Deci &
310 Ryan, 2008). Personal satisfaction is one of the key outcomes of more self-determined
311 motivation and is believed to lead to enhanced self-determination and task persistence
312 (Vansteenkiste, Simons, Lens, Deci, & Sheldon, 2004). Performing AT seems to pose time
313 conflicts with performing PET, for which the coaches do experience higher autonomy and
314 satisfaction. The relatively lower scores on time conflict for PET than AT suggest that the

315 'conflict' is attributed to the AT, not the PET, when obviously it is doing both that actually poses
316 the conflict. This finding is supported by the positive association of AT time conflict with stress
317 and the lack of relationship between stress and PET time conflict. Such findings suggest that
318 coaches might view AT tasks as outside the coaching role, whereas PET tasks are essential.
319 Future research examining coaches' perceptions of their roles and work-environment might help
320 shed further light on this distinction.

321 AT competence was negatively associated with stress, suggesting that those who feel
322 more competent at AT experience less associated stress. Zero order correlations showed that AT
323 competence was positively associated with PET satisfaction, AT satisfaction, and AT effort, and
324 negatively associated with PET time conflict. This is the first evidence that it is probably *not*
325 strictly competence that is the limiting factor for performing AT, autonomy is also important,
326 and there are complex relationships between the two tasks. One could speculate that providing
327 coaches with higher experiences of autonomy regarding the completion of AT tasks might be
328 more appealing. Redesigning coaching job descriptions to clearly articulate AT demands, or
329 constructing coaching teams dividing out the AT demands might also be beneficial.

330 SDT hypothesizes that when there is higher autonomy there should be higher task
331 satisfaction (Vansteenkiste, Niemec, & Soenens, 2010). We found higher autonomy for AT (the
332 less appealing task) was associated with intentions. There was no relationship for PET
333 autonomy, possibly due to low variation. PET autonomy and AT autonomy had significant
334 negative correlations with time conflict, and with stress in the structural equation model.
335 Furthermore, PET and AT time conflict are significantly associated with each other ($r=.76$), as
336 would be expected. However only AT time conflict was associated with higher stress, not PET,
337 suggesting a definite hierarchy in task preference. From a practical standpoint, it appears that the

338 job descriptions and expectations of professional coaches could be better structured to ensure
339 that sufficient time is allocated to AT to reduce time-conflict with PET. This is consistent with
340 the suggestions of Gilbert and Trudel (2004) who hypothesized that it is the lack of job structure
341 in coaching that leads to time-conflict.

342 Anecdotally, it is acknowledged that most high-performance coaches would engage
343 solely in PET if they could. However, AT effort had a strong positive correlation with AT
344 satisfaction and a small correlation with PET satisfaction. These results suggest that those
345 coaches who put more effort into AT experience more satisfaction from AT as well as from PET
346 tasks, with no empirical effect on time conflict, suggesting that time on task and effort on task
347 might be different. Therefore, the implementation of structured job expectations linked to reward
348 (i.e., contracted expectations and association with salary) might be a way to reduce stress
349 associated with non-preferred tasks (Siegrist, 1996) by helping coaches to understand the breadth
350 of the work expectations and appropriate time allocation of a competitive coach (Mallett & Côté,
351 2006; Cunningham & Dixon, 2003). If coaches regarded AT, in addition to PET, as an essential
352 part of the job and had appropriate behavioral expectations, they might perceive less time-
353 conflict between the two sets of tasks even though they retain higher preference for PET.

354 PET autonomy and AT autonomy were positively correlated with each other, negatively
355 associated with stress, and negatively correlated with time conflict in both domains (PET and
356 AT). AT autonomy was uniquely associated with AT satisfaction (but not PET satisfaction), and
357 PET autonomy was similarly associated with PET satisfaction (but not AT satisfaction). This is
358 clear evidence that AT and PET are distinct task categories. The association between autonomy
359 and satisfaction in both task domains is consistent with SDT (Deci & Ryan, 2008; Wilson &
360 Rodgers, 2002).

361 The purpose of the CFA was to examine the nature of the motivational experiences
362 underpinning PET compared to AT tasks. Again, on the advice of our expert panel of coaches
363 who reviewed earlier iterations of the intended instrument, no items relating to competence for
364 performing PET were included in this study of high performance coaches because the experts felt
365 this would impair the credibility of the entire study. This is an important limitation of our study.
366 Coaches consulted in item development experienced being asked if they were competent at
367 coaching skills to be unflattering and surprising, and advised that such questions could result in
368 coaches refusing to respond because of lost credulity for the relevance of the whole study. Future
369 studies of a broader population of coaches including inexperienced or novice coaches would
370 likely benefit from assessment of competence for performing PET.

371 In terms of intentions to continue in the *current coaching position*, the only association
372 was with PET satisfaction. However, in addition to PET satisfaction, AT autonomy was related
373 (but weakly) to intentions to *continue coaching in general*. There appears to be a critical
374 influence of PET satisfaction, which is not surprising given that the focus of high performance
375 coaches is usually upon performance enhancement. However, autonomy over AT also appears to
376 be related to intentions to continue coaching as a career. Some realization that AT are required in
377 career high-performance coaches, along with enough structure to reduce time-conflict between
378 AT and PET might result in higher coach satisfaction, lower stress, and better retention. An
379 unexpected finding was the positive association of AT time conflict with intentions to continue
380 coaching. This might arise because coaches experiencing extensive time conflict are likely to be
381 coaches with more complex jobs who perceive AT as critical to advancing in coaching as a
382 career. Although a low amount of variance in either type of intentions was accounted for, given
383 the homogeneity of the sample and the exploratory nature of the study, encouraging evidence of

384 the importance of distinguishing the influence of different tasks on coaches' experiences has
385 clearly emerged.

386 Coaching research has recognized the importance of performing AT in the role of the
387 competitive coach (e.g., Inglis, Danylchuk, & Pastore, 1996; MacLean & Chelladurai, 1995;
388 Dixon & Warner, 2009) but until now there has been very little discussion of the motivational
389 experiences of performing AT. Although our evidence concerning the coaches' competence for
390 PET was inferred, the evidence that coaches are satisfied with their PET and feel in control of
391 them was strong. However, when asked about AT, their autonomy and satisfaction levels were
392 only slightly lower. The current study provides novel evidence that coaches do feel competent
393 for performing AT and do derive some satisfaction from them, especially if they are expending
394 some effort on them.

395 There are some important limitations to consider in the interpretation of the data
396 presented here. First, despite a large and heterogeneous sample of high performance coaches, the
397 design is limited to cross-sectional consideration and so the direction of the relationships
398 emerging cannot be determined. Also, despite the large sample, it was not large enough to permit
399 sample splitting for the EFA and CFA. There is a need for future measurement work to further
400 elucidate motivational structures associated with PET and AT. Future research should address
401 both developing and high performance coaches and therefore credibly include assessments of
402 competence for PET. Less accomplished coaches might display different scores on the factors
403 identified here, and different relationships between the factors and intentions to continue in the
404 profession. Finally, more precise and proximal outcome variables could be assessed to determine
405 the short and long term effects of PET and AT experiences on coaches' career decisions.

406 **Conclusion**

407 The current results show that AT can be a source of job satisfaction for coaches when
408 they are associated with effort. However, time conflict between PET and AT is a source of
409 stress. Low autonomy for AT is associated with lower intentions to continue coaching. It is
410 possible that the time-conflict between PET and AT could be resolved through either clearer job
411 expectations and appropriately structured job descriptions, or alternatively through provision of
412 support for the least preferred tasks: AT (Allen & Shaw, 2009; Inglis, Danylchuk, & Pastore,
413 1996; MacLean & Chelladurai, 1995). The results clearly show that perceived autonomy for both
414 PET and AT are important correlates of lower perceived stress and of more positive intentions to
415 continue coaching in general and in a coaches' current position. The results reveal a complex
416 picture of motivational characteristics of PET and AT, with evidence of satisfaction for
417 performing both. Theoretical interpretation supports the general tenets of SDT, and future
418 research could take a primarily theoretical approach to complement this more practical approach.
419

420

References

- 421 Allen, J. B., & Shaw, S. (2009). Women coaches' perceptions of their sport organizations' social
422 environment: Supporting coaches' psychological needs? *The Sport Psychologist, 23*, 346-
423 366. doi:10.1016/j.smr.2009.03.005.
- 424 Amorose, A. J. (2007). Coaching effectiveness: Exploring the relationship between coaching
425 behavior and self-determined motivation. In M. S. Hagger, & N. L. D. Chatzisarantis
426 (Eds.) *Intrinsic motivation and self-determination in exercise and sport* (pp. 209-227).
427 Champaign, IL: Human Kinetics.
- 428 Banak, H., Sabiston, C. M., & Bloom, G. (2011). Paralympic athletes' perceptions of coach
429 autonomy and intrinsic motivation. *Research Quarterly for Exercise & Sport, 82*, 722-730.
- 430 Bartholomew, K.J., Ntoumanis, N., & Thogersen-Ntoumanis, C. (2010). The controlling
431 interpersonal style in a coaching context: Development and initial validation of a
432 psychometric scale. *Journal of Sport & Exercise Psychology, 32*, 193-216.
- 433 Boyce, B. A., Gano-Overway, L. A., & Campbell, A. (2009). The perceived motivational
434 climate's influence on goal orientations, perceived competence, and practice strategies
435 across the competitive athletic season. *Journal of Applied Sport Psychology, 21*, 381-394.
436 doi: <http://dx.doi.org/10.1080/10413200903204887>
- 437 Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress.
438 *Journal of Health and Social Behavior, 24*, 385-396. doi: [http://dx.doi.org/10.2307/](http://dx.doi.org/10.2307/2136404)
439 [2136404](http://dx.doi.org/10.2307/2136404)
- 440 Cunningham, G., & Dixon, M. (2003). New perspectives concerning performance appraisals of
441 intercollegiate coaches. *Quest, 55*, 177-192. doi:10.1080/00336297.2003.10491798.

- 442 Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In
443 R. Dienstbier (Ed.), *Nebraska symposium on motivation: Perspectives on motivation, Vol.*
444 *38* (pp.237-288). Lincoln, NE: University of Nebraska Press.
- 445 Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being
446 across life's domains. *Canadian Psychology, 49*, 14-23. doi:[http://dx.doi.org/10.1037/0708-](http://dx.doi.org/10.1037/0708-5591.49.1.14)
447 [5591.49.1.14](http://dx.doi.org/10.1037/0708-5591.49.1.14)
- 448 Dixon, M. A., & Warner, S. (2009). Employee satisfaction in sport: Development of a multi-
449 dimensional model in coaching. *Journal of Sport Management, 24*, 139-168.
- 450 Fernet, C., Senécal, C., Guay, F., Marsh, H., & Dowson, M. (2008). The Work Tasks Motivation
451 Scale for Teachers (WTMST). *Journal of Career Assessment, 16*, 256-279. doi:
452 <http://dx.doi.org/10.1177/1069072707305764>
- 453 Fletcher, D., & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts,
454 research, and practice. *Journal of Sports Sciences, 28*, 127-137.
- 455 Gagne, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of*
456 *Organizational Behavior, 26*, 331-362. doi:<http://dx.doi.org/10.1002/job.322>
- 457 Gilbert, W. D., & Trudel, P. (2004). Role of the coach: How model youth team and sport coaches
458 frame their roles. *The Sport Psychologist, 18*, 21-43.
- 459 Gillet, N., Vallerand, R. J., Amoura, S., & Baldes, B. (2010). Influence of coaches' autonomy
460 support on athletes' motivation and sport performance: A test of the hierarchical model of
461 intrinsic and extrinsic motivation. *Psychology of Sport and Exercise, 11*, 155-161.
462 doi:<http://dx.doi.org/10.1016/j.psychsport.2009.10.004>
- 463 Goodger, K., Gorely, T., Lavalley, D., & Harwood, C. (2009). Burnout in sport: A systematic
464 review. *The Sport Psychologist, 21*, 127-151.

- 465 Inglis, S., Danylchuk, K. E., & Pastore, D. (1996). Understanding retention factors in coaching
466 and athletic management positions. *Journal of Sport Management, 10*, 237-249.
467 doi:10.1177/019372396020004005.
- 468 Jowett, S. (2008). What makes coaches tick? The impact of coaches' intrinsic and extrinsic
469 motives on their own satisfaction and that of their athletes. *Scandinavian Journal of*
470 *Medicine & Science in Sports, 18*, 664-673. doi:10.1111/j.1600-0838.2007.00705.x.
- 471 Keegan, R. J., Harwood, C. G., Spray, C. M., & Lavallee, D. E. (2009). A qualitative
472 investigation exploring the motivational climate in early-career sports participants: Coach,
473 parent and peer influences on sport motivation. *Psychology of Sport and Exercise, 10*, 361-
474 372. doi: 10.1016/j.psychsport.2008.12.003.
- 475 Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York:
476 Guilford.
- 477 Knight, C. J., Reade, I. L., Selzler, A-M., & Rodgers, W. M. (2013). Personal and situational
478 factors influencing coaches' perceptions of stress. *Journal of Sports Sciences, 31*, 1054-
479 1063. doi:10.1080/02640414.2012.759659.
- 480 Knight, C. J., Rodgers, W. M., Reade, I. L., Mrak, J. M., & Hall, C. R. (in press). Coach
481 transitions: Influence of interpersonal and work environment factors. *Sport, Exercise, and*
482 *Performance Psychology*.
- 483 Lonsdale, C., & Hodge, K. (2011). Temporal ordering of motivational quality and athlete
484 burnout in elite sport. *Medicine and Science in Sports and Exercise, 43*, 913-921.
- 485 Lonsdale, C., Hodge, K., & Rose, E. (2009). Athlete burnout in elite sport: A self-determination
486 perspective. *Journal of Sports Sciences, 27*, 785-795. doi:http://dx.doi.org/10.1080
487 /02640410902929366

- 488 MacLean, J. C., & Chelladurai, P. (1995). Dimensions of coaching performance: Development
489 of a scale. *Journal of Sport Management*, 9, 194-207.
- 490 Mallett, C., & Côté, J. (2006). Beyond winning and losing: Guidelines for evaluating high
491 performance coaches. *The Sport Psychologist*, 20, 213-221.
- 492 McLean, K.N., & Mallett, C. J. (2011). What motivates the motivators? An examination of
493 sports coaches. *Physical Education and Sport Pedagogy*, 17, 21-35. doi:[http://dx.doi.org](http://dx.doi.org/10.1080/17408989.2010.535201)
494 /10.1080/17408989.2010.535201
- 495 McLean, K.N., Mallett, C. J., & Newcombe, P. (2012). Assessing coach motivation: The
496 development of the coach motivation questionnaire (CMQ). *Journal of Sport & Exercise*
497 *Psychology*, 34, 184-207.
- 498 Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide* (7th ed.). Los Angeles: Muthén &
499 Muthén.
- 500 Potrac, P., Brewer, C., Jones, R., Armour, K., & Hoff, J. (2000). Toward a holistic understanding
501 of the coaching process. *Quest*, 52, 186-199. doi: [http://dx.doi.org/10.1080](http://dx.doi.org/10.1080/00336297.2000.10491709)
502 /00336297.2000.10491709
- 503 Prentice, M., Halusic, M., & Sheldon, K.M. (2014). Integrating theories of psychological needs-
504 as-requirements and psychological needs-as-motives: A two process model. *Social and*
505 *Personality Psychology Compass*, 8, 73-85. doi:10.1111/spc3.12088
- 506 Ryan, R.M., & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new
507 directions. *Contemporary Educational Psychology*, 11, 319-338.
- 508 Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic-
509 dialectical perspective. In E. L. Deci, E.L & R. M. Ryan (2002), *Handbook of Self-*
510 *Determination Research* (p. 3-36). Rochester, NY: The University of Rochester Press.

- 511 Siegrist, J. (1996). Adverse health effects of high effort / low reward conditions. *Journal of*
512 *Occupational Health Psychology, 1*, 27-41. doi:10.1037//1076-8998.1.1.27.
- 513 Stebbings, J., Taylor, I. M., Spray, C. M., & Ntoumanis, N., (2012). Antecedents of perceived
514 coach interpersonal behaviors: The coaching environment and coach psychological well-
515 and ill-being. *Journal of Sport & Exercise Psychology, 34*, 481-502.
- 516 Vallerand, R. J. (2008). On the psychology of passion: In search of what makes people's lives
517 most worth living. *Canadian Psychology, 49*, 1-13. doi:http://dx.doi.org/10.1037 /0708-
518 5591.49.1.1
- 519 Vansteenkiste, M., Niemec, C., & Soenens, B. (2010). The development of the five mini-theories
520 of self-determination theory: An historical overview and future directions. In S.
521 Karabenick, & T. Urban, (Eds.), *The decade ahead: Theoretical Perspectives on*
522 *Motivation and Achievement, (pp. 105-165)*. New York: Emerald Group.
- 523 Vansteenkiste, M., Simons, J., Lens, W., Deci, E. L., & Sheldon, K. M. (2004). Motivating
524 learning, performance, and persistence: The synergistic effects of intrinsic goal contents and
525 autonomy-supportive contexts. *Journal of Personality and Social Psychology, 87*, 246-260.
526 doi:10.1037/0022-3514.87.2.246.
- 527 Washington, M., & Reade, I. (2013). Coach: The open systems manager. In P. Potrac, W. Gilbert
528 and J. Denison (Eds) *Routledge Handbook of Sports Coaching (pp. 297-308)*. New York:
529 Routledge.
- 530 Wilson, P. M., & Rodgers, W. M. (2002). The relationship between exercise motives and
531 physical self-esteem in female exercise participants: An application of self-determination
532 theory. *Journal of Applied Biobehavioral Research, 7*, 30-43. doi:10.1111/j.1751-
533 9861.2002.tb00074.x.

Table 1

Performance Enhancement Tasks

Item	Factor 1 Pattern coefficient	Factor 2 Pattern coefficient	Factor 3 Pattern coefficient
S1. I experience a sense of personal satisfaction	.889		
S2. I take a high degree of pride in how well I perform	.818		
S3. I find the tasks relating to...PE... to be personally enjoyable/rewarding	.795		
S4. If my job description would allow it, I would invest the majority of my time and energy into the tasks	.792		
S5. I really like doing the tasks that relate directly to784		
TC1. Given my current job requirements, I rarely feel I have sufficient time to adequately focus on the tasks840	
TC2. I feel that my performance on the tasks relating directly to the ...PE...suffers because of time conflicts with other aspects of my job		.838	
TC3. I find that the ...PE tasks... conflict with my other job responsibilities (e.g., administration...)		.790	
TC4 [†] . There is sufficient time in my weekly schedule to focus on tasks that relate directly to ...PE.		.619	
A1. I can choose to spend as much or as little time as I want on the tasks associated with ...PE			.843
A2. I feel that how I perform the tasks ...PE... is completely up to me			.819
A3. I have a high degree of choice regarding the ...PE... I conduct547
	Factor 1 PET Satisfaction 5 items	Factor 2 PET Time conflict 3 items	Factor 3 PET autonomy 4 items

Chronbach's alpha	.869	.783	.647
Mean	5.277	4.26	6.16
Standard deviation	1.19	1.39	0.94
Interfactor correlations			
Factor 1	1		
Factor 2	.040	1	
Factor 3	.263**	-.202	1

Note. * $p < .05$; ** $p < .01$; † indicates item removed from Final CFA.

Table 2.

Administration Tasks

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
S1. I find performing AT to be personally enjoyable/rewarding	.758					
S2. I experience a sense of personal satisfaction from doing the AT	.711					
S3. I really like doing the AT	.778					
S4 [†] . Of all the things I do in my job, performing the AT is what I do best	.655					
TC1. I feel that my performance on AT suffers because of time conflicts with other parts of my job		.852				
TC2. Given my current job requirements, I rarely feel I have sufficient time to adequately focus on AT		.821				
TC3. I find that performing AT conflicts with my other job responsibilities (e.g., PE)		.726				
TC4 [†] . There is sufficient time in my weekly schedule (in season/out of season) to focus on AT		.684				
E1. I put maximal amounts of personal effort into AT			-.717			
E2. I take a high degree of pride in how well I perform AT			-.662			
E3. I put the minimum effort required into performing AT			-.713			
E4 [†] . I try to do the AT to the best of my ability			-.757			
A1. I feel that how I perform the AT is completely up to me				.859		
A2. I can choose to spend as much or as little time as I				.844		

want to on the AT

A3. I have a high degree of choice regarding performance of the AT	.644	
C1. I am extremely confident in my abilities to conduct the AT		.638
C2. I feel that I do not have the necessary skills to perform the AT		.795
C3. My previous training/education has prepared me well to perform AT		.797
JR1. Performing my AT is extremely important to achieving my coaching goals		.779
JR2. Conducting AT is a primary expectation of my job	-.319	.567
JR3. Conducting AT is extremely relevant to what a coach at my level should be doing		.710

	Factor 1 AT Satisfaction 4 items	Factor 2 AT Time conflict 4 items	Factor 3 AT effort 4 items	Factor 4 AT autonomy 4 items	Factor 5 AT competence 3 items	Factor 6 AT Job requirements 3 items
Chronbach's alpha	.83	.77	.80	.70	.68	.60
Mean	3.22	4.33	4.99	4.03	5.23	3.87
Standard deviation	1.23	1.32	1.22	1.30	1.27	1.41
Interfactor correlations						
Factor 1 (satisfaction)	1					
Factor 2 (time)	-.124	1				
Factor 3 (effort)	-.250	-.056	1			
Factor 4 (autonomy)	.192	-.202	.043	1		
Factor 5 (competence)	.160	-.043	-.286	.009	1	
Factor 6 (job requirements)	.318	.032	-.228	.031	.122	1

Note. † indicates item removed from Final CFA.

MOTIVATIONAL CHARACTERISTICS OF COACHING TASKS

Table 3.
Correlations among Administrative and Performance Enhancing Task Factor Indicators

	PET satisfaction	PET time conflict	PET autonomy	AT satisfaction	AT time conflict	AT effort	AT autonom
PET satisfaction	1						
PET time conflict	.09	1					
PET autonomy	.44**	-.17**	1				
AT satisfaction	.00	-.14**	.07	1			
AT time conflict	.14*	.76**	-.15*	-.12*	1		
AT effort	.13*	-.07	.02	.72**	.012	1	
AT autonomy	.04	-.22**	.49**	.26**	-.21**	.02	1
AT competence	.14**	-.15**	.12*	.45**	.00	.54**	.10
AT job requirement	.06	-.05	.05	.59**	.09	.54**	.12*

MOTIVATIONAL CHARACTERISTICS OF COACHING TASKS

Note. * $p < .05$; ** $p < .01$; PET = performance enhancing tasks; AT = administrative tasks.

Table 4

Standardized Estimates for Structural Models of the Predictors of Perceived Stress and Intentions to Continue Coaching

Predictor	Perceived Stress	Intentions Continue	Intentions Continue
	Scale	Coaching	This Position
PET autonomy	-.13 (.08)	-.06 (.09)	-.09 (.08)
PET satisfaction	.03 (.05)	.20**(.06)	.18**(.06)
PET time constraints	.14 (.10)	-.17 (.12)	-.08 (.11)
AT time constraints	.25* (.11)	.23* (.11)	.09 (.13)
AT effort	.13 (.09)	.17 (.10)	.01 (.10)
AT autonomy	-.05 (.07)	.18* (.08)	.03 (.08)
AT competence	-.30**(.06)	-.17* (.07)	-.07 (.07)
AT satisfaction	-.09 (.09)	-.05 (.11)	.02 (.12)
AT job requirement	.19**(.07)	-.07 (.08)	.01 (.09)

Note. Standard errors are in parentheses. PET = performance enhancement tasks, AT = administrative tasks.

* $p < .05$, ** $p < .01$.