

Lovers With Happy Feet: The Interdependence of Relationship and Activity Factors for Individuals Dancing With a Romantic Partner

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The significance that romantic partners ascribe to joint activities and the impact these activities have on relationship quality were examined in the context of self-determination theory. Individuals who practice ballroom dancing with a romantic partner were invited to complete measures of motivation and perception of dyadic adjustment for their relationship and when dancing. Results from path analyses suggested direct and indirect effects of relationship motivation on satisfaction when dancing with a partner. Additionally, direct and indirect effects of motivation for dancing with a partner on relationship satisfaction were also found. Overall, this study suggests that couple functioning plays a role in joint activity functioning and satisfaction. Satisfaction in joint activities can also contribute to the overall quality of the relationship.

When two individuals invest themselves in an intimate relationship, they share a part of their personal identity, as well as a complex array of day-to-day experiences with one another. Our romantic lives are the combination of various joint activities carried out with our partners, and our overall couple well-being depends, at least in part, on the satisfaction experienced during these specific activities (Johnson, Zabriskie, & Hill, 2006). Romantic partners may have different reasons motivating them to engage in both their relationship and relational activities. In turn, these motives could greatly influence the level of satisfaction they experience as a couple and throughout their activities.

Traditionally, research on intimate relationships has looked at relationship outcomes, such as couple well-being and individual satisfaction. However, romantic partners' psychological functioning is also shaped by the activities they carry out together (Gaine & La Guardia, 2009; Johnson et al., 2006). The outcome of these activities is not necessarily attributed to the time

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spent together, but may be a consequence of the quality of the effort put toward the relationship. In the same way, consequences for the relationship could be associated with the way in which partners invest themselves in joint activities. The interdependence of individual characteristics at the relationship level and relational activity level is the focus of the current investigation.

The social context in which individuals (and couples) evolve is rarely a neutral and dormant factor in applied social psychology research. Previous studies have investigated the motivational processes associated with well-being in intimate relationships (for a review, see La Guardia & Patrick, 2008), as well as in leisure activities (Pelletier, Vallerand, Green-Demers, Blais, & Brière, 1996). Yet, no research to date has integrated these two domains. Investigations on the psychological processes that intervene at each level could provide valuable insight into couple functioning, because intimate relationships and relational activities are closely interconnected. In addition, applied cross-domain research is a valuable area of investigation in the field of social motivation.

The present study proposes to examine these issues based on the premises of self-determination theory (SDT; Deci & Ryan, 1985, 2008). The framework provided by this theory is useful in the context of the current study, as it has been the object of much attention in research examining intimate relationships. SDT has also contributed to a better understanding of the motivational processes involved in leisure activities. The theory portrays motivation as a multidimensional construct suggesting that different types of motivation are associated with different reasons underlying behavior across life domains (Deci & Ryan, 1985). It is theorized that the type of motivation is more important than the amount of motivation in predicting outcomes (Deci & Ryan, 2008).

SDT suggests that motivation varies along a continuum of self-determination. When motivation is more self-determined, behavior is carried out with a full sense of autonomy and choice. In contrast, when motivation is less self-determined, behavior is carried out under external constraints in order to attain specific outcomes (Deci & Ryan, 1985, 2008). Research has shown that more self-determined motivation is generally associated with positive psychological outcomes, whereas less self-determined motivation is generally associated with negative psychological outcomes (for a review, see Ryan & Deci, 2006).

Intimate Relationships

Numerous studies have investigated the role that motivation for an intimate relationship plays on relationship outcomes. Previous research has

demonstrated that the quality of an intimate relationship is largely influenced by the reasons for which individuals engage in the relationship. It has been shown that romantic partners who are involved in an intimate relationship for extrinsic reasons report being less in love with their significant other than do individuals who are in a relationship for more intrinsic reasons (Seligman, Fazio, & Zanna, 1980). Accordingly, Rempel, Holmes, and Zanna (1985) have suggested that love and relationship satisfaction are strongly associated with the type of relationship motivation of both partners.

The association between motivation for an intimate relationship and satisfaction was further investigated through the study of perceived dyadic adjustment by Blais, Sabourin, Boucher, and Vallerand (1990). They suggested that more self-determined relationship motivation was related to higher levels of perceived dyadic adjustment within the relationship, whereas less self-determined motivation was associated with poorer perceived dyadic adjustment. Another study (Aimé, Sabourin, & Valois, 2000) investigated the level of self-determined motivation of each partner in association with marital satisfaction (measured with partners' perceived dyadic adjustment) and showed a strong correlation between the two partners' motivation for engaging in the relationship together. In addition, the researchers proposed that couples in which both partners had high levels of self-determined motivation toward the relationship reported higher levels of marital satisfaction, as compared to couples in which both partners had lower levels of self-determined motivation.

More recently, research on motivation for intimate relationships has explored the link between self-determination and its influence on romantic partners' behaviors within the relationship. In a series of studies, Knee, Patrick, Vietor, Nanayakkara, and Neighbors (2002) proposed that individuals who were involved in an intimate relationship for more intrinsic reasons used more adaptive and constructive problem-solving behaviors when faced with a conflict. Another series of studies examining conflicts in intimate relationships demonstrated that higher levels of self-determined motivation for a relationship were significantly related to higher levels of satisfaction after a disagreement with a romantic partner (Knee, Lonsbary, Canevello, & Patrick, 2005; Patrick, Knee, Canevello, & Lonsbary, 2007).

In light of these findings, one wonders if patterns similar to the psychological processes observed within the relationship may occur in other relationship-related domains (e.g., activities practiced with a romantic partner). An important aspect of the previously discussed research is that it examined perceptions of relationship satisfaction in general, and not in the context of a specific relational activity. The interconnectedness of intimate relationships and relational activities suggests that relationship motivation could play a role in activity satisfaction. For instance, individuals with higher

levels of self-determined motivation may be more inclined to share activities with their partners. Because research on SDT has suggested that the overall quality of experience is greater when motivation is self-determined, a feeling of greater satisfaction could also arise from relational activities when motivation for the relationship is self-determined. Therefore, we propose that self-determined motivation for the relationship can positively affect satisfaction for a relational activity, in addition to relationship satisfaction. In the current article, we define such an interaction between relationship domain factors and relational activity domain factors as *top-down effects* in the relationship context.

Leisure Activities With a Romantic Partner

Leisure activities can be characterized by the subjective experience of free choice, positive emotions, and diminished attention to the passage of time (Iso-Ahola, 1979; Kelly, 1982; Neulinger, 1981; Pelletier et al., 1996). Research suggests that leisure activities are related to life satisfaction and psychological health (Csikszentmihalyi, 1997; Neulinger, 1981; Tinsley & Tinsley, 1986). In accordance with SDT, Pelletier et al. suggested that this is especially true for individuals who engage in a leisure activity for self-determined reasons. More specifically, these authors observed that higher levels self-determined motivation for leisure activities were more strongly associated with leisure interest, positive emotions, and leisure satisfaction, while lower levels of self-determined motivation were negatively associated with these same outcomes.

In the context of intimate relationships, romantic partners often share their time in common relational activities, such as leisure involvement, household care, intimacy, and so forth. Therefore, based on SDT and research on leisure activities, one can expect that relational activities undertaken for leisure purposes should be associated with relationship satisfaction, especially if they are practiced for self-determined reasons. In congruence with this conclusion, a recent study by Gaine and La Guardia (2009) suggested that the level of self-determined motivation for engaging in a specific relational activity increases the level of relationship well-being of both partners, independent of relationship motivation. The researchers assessed the extent to which romantic partners felt that their involvement in a number of relational activities (e.g., sexual intimacy, social support, support for their partners' life aspirations) was self-determined. The findings revealed that the more individuals engaged in these relational activities for self-determined reasons, the greater was their level of commitment and satisfaction within the relationship.

Overall, these findings suggest an association between motivation for a relational activity and relationship satisfaction. In other words, self-determined motivation for a relational activity can positively affect relationship satisfaction, in addition to satisfaction for the activity. In the present article, we define such an interaction between relational activity domain factors and relationship domain factors as *bottom-up effects* in the relationship context.

Interdependence Between the Relationship and Relational Activities

The interdependent nature of the relationship and relational activities has implications with regard to the associations between motivation and satisfaction variables on both levels. Essentially, the motivational processes intervening at the activity level are closely linked to the motivational processes at play in the relationship. In accordance with SDT, we propose that the development of high levels of self-determined motivation for the relationship should foster self-determined motivation for relational activities, whereas low levels of self-determined motivation for the relationship should thwart self-determined motivation for relational activities. In a similar fashion, high levels of self-determined motivation for a relational activity should be associated with more self-determined motivation at the relationship level, while low levels of self-determined motivation for a relational activity should be associated with less self-determined motivation for the relationship. Considering that the relationship encompasses a multitude of relational activities, one can expect that a particular relational activity may not have as much influence toward the relationship as a whole, compared to the influence that relationship variables may have on relational activity variables. In other words, the top-down influence of the relationship could be more significant than the bottom-up influence of relational activities.

The top-down and bottom-up effects discussed in the previous sections presuppose mutual influence among constructs of the same nature measured across different levels (e.g., relationship motivation vs. relational activity motivation). Past literature has suggested some evidence of similar associations between higher order and subordinate levels of motivation (Vallerand, 1997) and satisfaction (Johnson et al., 2006). Therefore, we expect that relationship motivation should be associated with motivation to practice an activity with a romantic partner. Furthermore, we expect that the satisfaction experienced within the relationship should be correlated with the satisfaction that partners will experience when engaging in an activity together.

In accordance with these propositions, it is apparent that mutual and cross-level influences of motivation and satisfaction could occur between the relationship level and the relational activity level. More specifically, the integration of the literature reviewed previously suggests that relationship motivation may be associated with satisfaction for a relational activity through the influence of either (a) motivation for the activity itself and, in turn, its influence on activity satisfaction; or (b) its influence on relationship satisfaction and, in turn, activity satisfaction. Similar interdependent processes could be theorized with regard to the association between motivation for the relational activity and relationship satisfaction.

The Present Study

We still know relatively little about the relation between what a couple is and what a couple does. More specifically, do the reasons why romantic partners get involved in their relationship influence how they function in their activities together; and, in turn, can the activity have a significant influence on the level of satisfaction for the relationship?

Some relational activities provide a particularly rich milieu of investigation for the integration of research on intimate relationships and leisure activities. Ballroom dancing represents a novel and intriguing applied setting that imposes considerable demands on both partners. Put more directly, dancing with a partner requires a fair amount of communication, as well as constant collaboration. As this type of activity is often associated with peer evaluation, the setting is prone to the creation of tension between partners. Overall, ballroom dancing can lead to both positive and negative outcomes within the romantic relationship. Therefore, this makes it a suitable venue for assessing the cross-domain hypotheses proposed in the present article.

For the purpose of this study, motivation is assessed at two different levels: self-determined motivation toward one's relationship (i.e., relationship self-determination), and for dancing with a romantic partner (i.e., dancing self-determination). In line with the previous literature (e.g., Blais et al., 1990; Knee et al., 2005), satisfaction is assessed through perceived dyadic adjustment at the relationship level (i.e., PDA-R) and the activity level (i.e., when dancing with a romantic partner; PDA-D).

For the purpose of this study, we developed three alternative models. The first model (Figure 1A) examines the top-down processes involved in the prediction of perceived dyadic adjustment when dancing by relationship self-determination. The second model (Figure 1B) examines the bottom-up processes involved in the prediction of perceived dyadic adjustment for

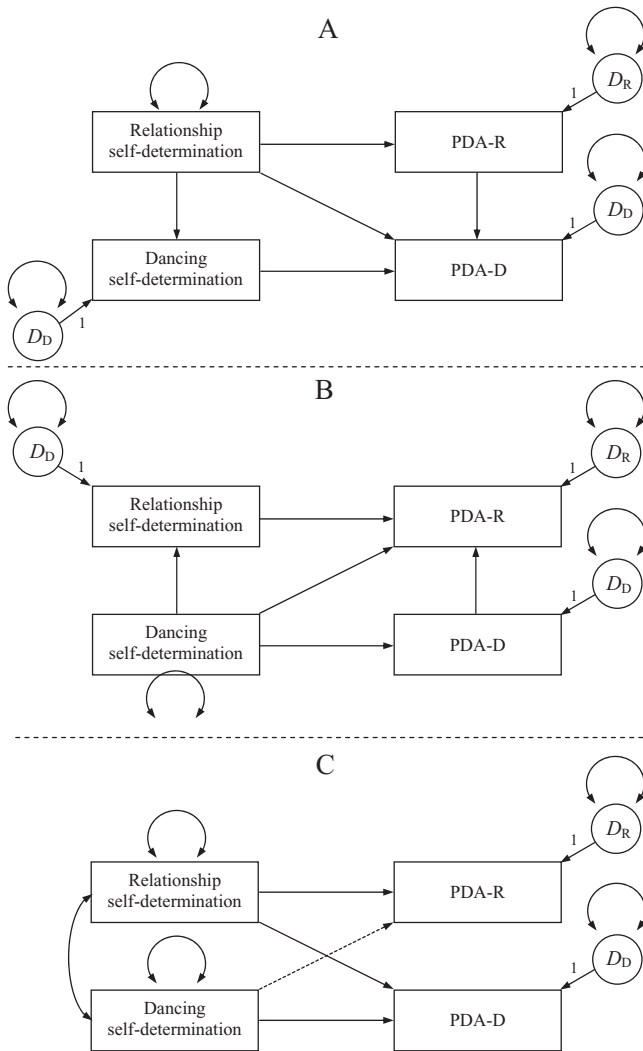


Figure 1. Theorized top-down model (A); bottom-up model (B); and combined model (C). PDA-R = perceived dyadic adjustment at the relationship level; PDA-D = perceived dyadic adjustment when dancing with a romantic partner.

the relationship by dancing self-determination. Finally, a combined model (Figure 1C) examines the prediction of perceived dyadic adjustment for the relationship and perceived dyadic adjustment when dancing simultaneously by dancing self-determination in conjunction with relationship self-determination.

Method

Participants and Procedure

The study participants were 90 individuals (40 men, 50 women) who are involved in an intimate relationship and who practice ballroom dancing on a weekly basis with a romantic partner. Participants were amateur ballroom dancers of various skill levels and years of experience in ballroom dancing. The length of participants' relationships ranged from 1 year to more than 20 years ($M = 9.1$ years, $SD = 6.9$). Their ages ranged from 16 to 66 years ($M = 39.8$ years, $SD = 11.6$).

Researchers visited various dance schools and invited dancers to complete a paper-and-pencil questionnaire. There were 65 participants who completed the questionnaire package at home and returned it by mail in an unmarked envelope. The researchers also contacted various dance-school directors electronically, asking them to send an e-mail invitation to their students. As a result, 35 participants completed the questionnaire as a Web-based survey. Mean comparisons of demographic variables suggest no significant difference between the two groups: length of relationship, $t(87) = 0.56$, *ns*; and age, $t(87) = -0.12$, *ns*.

Measures

Relationship self-determination. We used the Couple Motivation Questionnaire (CMQ; Blais et al., 1990) to assess individuals' reasons for engaging in an intimate relationship, based on SDT. The questionnaire consists of 21 items subdivided into six subscales, which correspond to the constructs identified in SDT (i.e., intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation, amotivation).

The statements relate to reasons for being involved in an intimate relationship, and the participants were asked to rate the degree to which they agree with each statement on a 7-point Likert-type scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*). Sample items are as follows: "Because I love the many fun and crazy times I share with my partner" (intrinsic motivation); "Because I value the way my relationship with my partner allows me to improve myself as a person" (integrated regulation); "Because life with my partner offers me the opportunity to learn how to better communicate my ideas" (identified regulation); "Because my relationship with my partner is a commitment that I have to hold" (introjected regulation); "Because my partner would not be able to cope with a

separation" (external regulation); and "I don't know; I feel helpless about the fact that sooner or later we are going to separate" (amotivation).

To measure participants' general levels of self-determination in a parsimonious model, a number of studies have shown the usefulness of combining the scores of each subscale into a self-determination index (SDI; Blais et al., 1990; Knee et al., 2005; Ryan & Connell, 1989; Vallerand, 1997). Following the steps outlined in past literature (Blais et al., 1990; Knee et al., 2005), the scores from each subscale were weighed based on their position in the self-determination continuum: intrinsic motivation (IM), +3; integrated regulation (INTEG), +2; identified regulation (IDEN), +1; introjected regulation (INTRO), -1; external regulation (ER), -2; and amotivation (AMO), -3.

Relationship self-determination was measured using the weights of the six regulatory styles according to the following formula: relationship self-determination = $3 * IM + 2 * INTEG + IDEN - INTRO - 2 * ER - 3 * AMO$. The theoretical range for the index varies from -36 to 36. A low index indicates lower levels of relationship self-determination, whereas a high index indicates higher levels of relationship self-determination. Cronbach's alpha for the combined items forming the index in this sample was .73.

Perceived dyadic adjustment for the relationship. The Dyadic Adjustment Scale–Brief Version (DAS-4; Sabourin, Valois, & Lussier, 2005) is comprised of four items and represents a brief version of the Dyadic Adjustment Scale that was developed by Spanier (1976). This scale assesses dyadic happiness and satisfaction in an intimate relationship. Past research has demonstrated the validity and reliability of this scale (Sabourin et al., 2005).

The first three items of the DAS-4 are as follows: "How often do you discuss or have you considered divorce, separation, or terminating your relationship?"; "In general, how often do you think that things between you and your partner are going well?"; and "Do you confide in your mate?" All three items are scored on a 6-point scale ranging from 0 (*never*) to 5 (*always*). The last item included in the DAS-4 measures global satisfaction in the relationship and is scored on a 7-point scale ranging from 0 (*extremely unhappy*) to 6 (*perfectly happy*). The four items were combined in order to create a composite measure of perceived dyadic adjustment for the relationship ($\alpha = .87$).

Self-determination for dancing with a romantic partner. We developed the Motivation for Activities With a Romantic Partner Inventory (MARPI) for the present study. This scale is based on SDT and was adapted from the Échelle de Motivation Vis-à-Vis des Loisirs (Leisure Motivation Scale; Pelletier et al., 1996) in order to assess the different reasons why individuals engage in a relational activity with a romantic partner. For the purpose of this study, the content of the scale was adjusted to measure partners' levels of self-determination for practicing ballroom dancing with their significant others.

The scale consists of 20 items that are ranked on a 7-point scale, with four items representing each of the five SDT motivational types: intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation. Integrated regulation was not included in the original scale (see Pelletier et al., 1996) and, as such, could not be adapted in the MARPI. The items offer various answers to the question “Why do you practice ballroom dancing with your romantic partner?” Participants were asked to rank their responses on a 7-point scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*). Cronbach’s alpha for the combined items forming the index in this sample was .70.

When the Leisure Motivation Scale (Pelletier et al., 1996) was developed, the authors suggested that only three forms of extrinsic motivation could be measured in the leisure domain; namely, identified regulation, introjected regulation, and external regulation. As a consequence, the MARPI is comprised of only five subscales and does not measure integrated regulation.

For the computation of an SDI combining only five subscales, experts have suggested using weights ranging from +2 to -2, while combining the scores of introjected and external regulations (for a review, see Vallerand, 2007). The combination of introjected regulation and external regulation into a single score allows for equal distribution of the weights for self-determined (intrinsic and identified) versus non-self-determined (introjected regulation, external regulation, and amotivated) forms of regulation (Vallerand, 2007). An index of motivation for a relational activity was thus obtained by combining the scores of each of the five subscales using the following formula:

$$\text{dancing self-determination} = 2*IM + IDEN - (INTRO + ER)/2 - 2*AMO$$

The theoretical range for the index varies from -18 to +18. A low index indicates lower levels of dancing self-determination, whereas a high index indicates higher levels of dancing self-determination.

Perceived dyadic adjustment when dancing. The four items from the DAS-4 (Sabourin et al., 2005) were adapted in order to assess the overall dyadic satisfaction that participants experienced while practicing ballroom dancing with a romantic partner. The first three items are scored on a 6-point scale ranging from 0 (*never*) to 5 (*always*) and are as follows: “How often have you considered ending your dance classes with your romantic partner or finding a new partner?”; “In general, how often do you think that things between you and your romantic partner are going well when you are dancing?”; and “When you are dancing together, do you confide in your romantic partner?” The last item measures partners’ global satisfaction when dancing together and is scored on a 7-point scale ranging from 0 (*extremely*

unhappy) to 6 (*perfectly happy*). The four items were combined to create a global measure of perceived dyadic adjustment when dancing ($\alpha = .73$).

Data Analysis

Data analysis was carried out in three steps: preliminary analyses, correlational analyses, and path analyses using structural equation modeling (SEM). In the first step, preliminary analyses ensured that the data met the basic assumptions required for SEM. In the second step, correlational analyses examined basic associations among the tested constructs. Finally, in the third step, three alternative models were tested separately using SEM: (a) a top-down model; (b) a bottom-up model; and (c) a combined model (Figure 1).

The parameters were estimated by means of the maximum likelihood (ML) fitting function. ML provides a model chi-square statistic. A low, nonsignificant model chi square normally points to an acceptable model fit. Nevertheless, as this index is oversensitive to sample size, model fit was also based on other indexes: root mean square error of approximation (RMSEA; Browne & Cudeck, 1993), comparative fit index (CFI; Bentler, 1990), and standardized root mean square residual (SRMR; Jöreskog & Sörbom, 2003; Kline, 2005). Values below .10 for both the RMSEA and the SRMR indexes represent satisfactory fit (Kline, 2005). The CFI can vary from 0 to 1, where a higher value indicates a better fit. Model fit for CFI is generally viewed as satisfactory when values are above .90 (Kline, 2005). SEM was conducted using LISREL 8 statistical software (Jöreskog & Sörbom, 2003).

Results

Descriptive and Preliminary Analyses

Preliminary analyses consisted of a set of screening procedures to ensure that the postulates of normality, linearity, homoscedasticity, and absence of multicollinearity were met in order to proceed with SEM. A common procedure to assess normality consists of computing a *z* score and dividing the values of skewness and kurtosis by their standard error. However, this procedure provides little useful information with large samples such as the present one (Tabachnick & Fidell, 2000). Instead, Kline (2005) recommended interpreting the absolute values of skewness and kurtosis, and suggested that values greater than 3.0 for skewness and greater than 10.0 for kurtosis are generally considered extreme. In the present data, dancing self-determination would be considered as presenting extreme kurtosis (Table 1).

Table 1

Descriptive Statistics

Variable	<i>M</i>	<i>SD</i>	Kurtosis (<i>SE</i>)	Skewness (<i>SE</i>)	Theoretical range	Observed range
Relationship self-determination	22.88	8.67	5.01 (0.51)	-1.99 (0.26)	-36 to 36	-12.17 to 35.00
PDA-R	4.31	0.78	3.81 (0.51)	-1.83 (0.26)	1.00 to 5.50	1.50 to 5.25
Dancing self-determination	12.73	3.34	11.89 (0.51)	-2.75 (0.26)	-18 to 18	-5.88 to 16.50
PDA-D	4.06	0.77	0.47 (0.50)	-0.61 (0.25)	1.00 to 5.50	2.00 to 5.25

Note. PDA-R = perceived dyadic adjustment at the relationship level; PDA-D = perceived dyadic adjustment when dancing with a romantic partner.

Overall, all four composite variables indicate that participants were fairly self-determined and happy within their relationships and relational activities. However, in terms of normality, the impact of skewness and kurtosis becomes negligible with sample sizes approaching 100, and, as such, no data transformations were attempted (Tabachnick & Fidell, 2000).

The data were also screened for missing values and extreme outliers. No variable presented more than 5% of missing data. The search for outliers was conducted by standardizing each variable and screening it for p values deviating to more than .001. No statistically significant outliers were detected. Examination of the means and standard deviations reveals that their values were plausible and within the expected theoretical range. Descriptive statistics are presented in Table 1.

Basic Associations Among Tested Constructs

In the first step, zero-order Pearson bivariate correlations were computed to examine the relations between the variables included in the hypothesized models. There are three types of basic associations that can be identified: within-level (motivation with satisfaction), between-level (motivation with motivation), and cross-level (e.g., dancing self-determination with PDA-R).

Within-level associations were consistent with our predictions. Table 2 shows that relationship self-determination was significantly and positively correlated with perceived dyadic adjustment for the relationship (PDA-R). In the same way, dancing self-determination was correlated with perceived dyadic adjustment when dancing (PDA-D).

Between-level associations for motivation variables and for satisfaction variables also support our hypotheses. A positive correlation was found between relationship self-determination and dancing self-determination, as

Table 2

Pearson Bivariate Correlations

Variable	1	2	3
1. Relationship self-determination	—		
2. PDA-R	.81	—	
3. Dancing self-determination	.63	.50	—
4. PDA-D	.60	.57	.60

Note. All correlations are statistically significant at $p < .01$. PDA-R = perceived dyadic adjustment at the relationship level; PDA-D = perceived dyadic adjustment when dancing with a romantic partner.

well as between PDA-R and PDA-D. In addition, the correlations in Table 2 suggest preliminary evidence of a top-down effect between relationship self-determination and PDA-D. There was also evidence of a bottom-up effect between dancing self-determination and PDA-R. All correlations were significant ($p < .01$).

Although the results from these basic associations corroborated between-level interactions of motivation and satisfaction, they were limited in the sense that observed correlations often conceal actual associations between tested constructs that would appear when controlling for the intercorrelations between all variables (Kline, 2005). Thus, we proceeded with the path analyses using SEM.

Top-Down Model of Motivation and Satisfaction

The top-down model of motivation and satisfaction relates to the prediction of perceived dyadic adjustment when dancing (PDA-D) by relationship self-determination through motivation and satisfaction factors. This first model was specified using relationship self-determination as the exogenous variable in association with three endogenous variables: dancing self-determination (the motivation factor), PDA-R (the satisfaction factor), and PDA-D (the outcome).

In accordance with the theorized model, additional pathways were tested between dancing self-determination and PDA-D, as well as between PDA-R and PDA-D. The findings reveal excellent indexes of fit for the resulting model (Figure 2A), $\chi^2(1, N = 90) = 0.05, p = .831$ (RMSEA = .000; CFI = 1.000; SRMR = .004). Most pathways were statistically significant, with the exception of the direct path from relationship self-determination to PDA-D, and the path from PDA-R to PDA-D.

Upon analysis of the standardized solution, we determined that the top-down model suggests direct effects of relationship self-determination on dancing self-determination and on PDA-R, as well as a direct effect of dancing self-determination on PDA-D. In addition, the model suggests an indirect effect of relationship self-determination on PDA-D via dancing self-determination (.63*.37 = .23). In combination with the correlational analyses, these results indicate that top-down processes between relationship self-determination and PDA-D mostly function through a motivation factor, rather than a satisfaction factor.

Bottom-Up Model of Motivation and Satisfaction

The bottom-up model of motivation and satisfaction relates to the prediction of perceived dyadic adjustment for the relationship (PDA-R) by

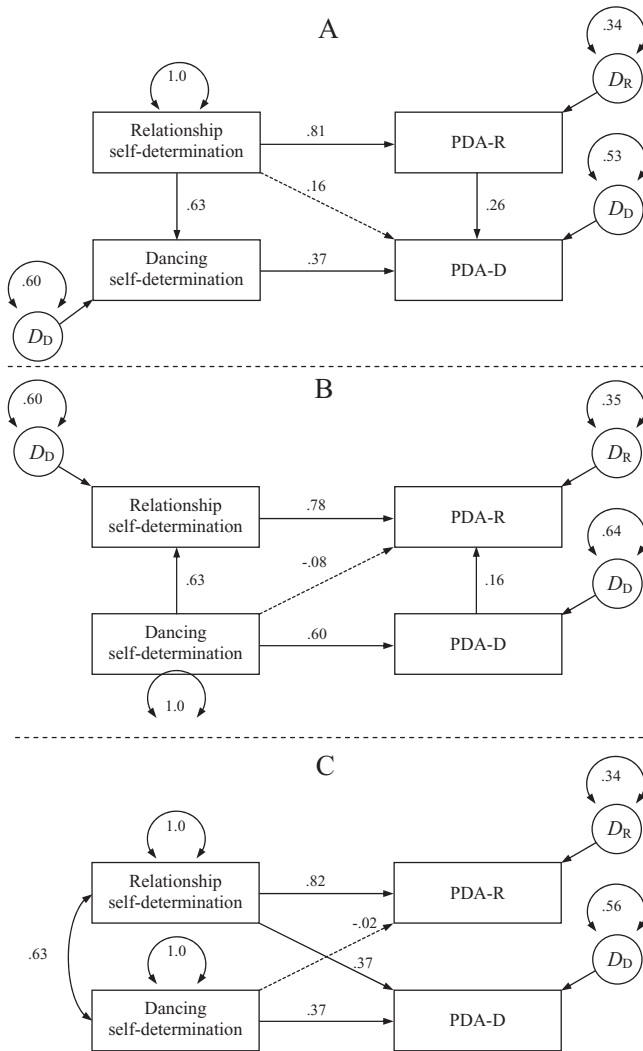


Figure 2. Estimated top-down model (A); bottom-up model (B); and combined model (C). PDA-R = perceived dyadic adjustment at the relationship level; PDA-D = perceived dyadic adjustment when dancing with a romantic partner.

dancing self-determination through motivation and satisfaction factors. This second model was specified using dancing self-determination as the exogenous variable, in association with three endogenous variables: relationship self-determination (the motivation factor), PDA-D (the satisfaction factor),

and PDA-R (the outcome). In accordance with the theorized model, additional pathways were tested between relationship self-determination and PDA-R, as well as between PDA-D and PDA-R. The findings reveal poor indexes of fit for the resulting model (Figure 2B), $\chi^2(1, N = 90) = 11.36$, $p < .001$ (RMSEA = .343; CFI = .945; SRMR = .092).

All pathways were statistically significant, with the exception of the direct path from dancing self-determination to PDA-R. Analysis of the standardized solution suggests the presence of direct effects of dancing self-determination on relationship self-determination and on PDA-D; a direct effect of relationship self-determination on PDA-R; as well as a direct effect of PDA-D on PDA-R. In addition, the model suggests indirect effects of dancing self-determination on PDA-R via relationship self-determination (.63*.78 = .49) and via PDA-D (.60*.16 = .10). In combination with the correlational analyses, these results indicate that bottom-up processes between dancing self-determination and PDA-R function through both a motivation factor and a satisfaction factor. However, this model did not fit the data very well.

Combined Model of Motivation and Satisfaction

The combined model of motivation and satisfaction relates to the prediction of perceived dyadic adjustment for the relationship and perceived dyadic adjustment when dancing simultaneously by dancing self-determination, in conjunction with relationship self-determination. This third model was specified using both dancing self-determination and relationship self-determination as exogenous variables, while using PDA-D and PDA-R as endogenous variables. The findings reveal adequate indexes of fit for the resulting model (Figure 2C), $\chi^2(1, N = 90) = 3.58$, $p = .059$ (RMSEA = .172; CFI = .987; SRMR = .028).

All pathways were statistically significant, with the exception of the direct path from dancing self-determination to PDA-R. Analysis of the standardized solution suggests the presence of direct effects of relationship self-determination on PDA-R, as well as PDA-D, in addition to a direct effect of dancing self-determination on PDA-D. These results indicate that the top-down process (relationship self-determination to PDA-D) is stronger and more statistically significant than is the bottom-up process (dancing self-determination to PDA-R). However, as both exogenous variables were allowed to covary in this model, the two motivations can be assumed to contribute at least in some way to the prediction of the two endogenous variables.

In summary, three alternative models of motivation and satisfaction were examined (Table 3). The top-down model explains a reasonable amount of

Table 3

Comparison of Model Fit Statistics

Model	$\chi^2(1)$	<i>p</i>	RMSEA	CFI	SRMR
Top-down	0.05	.831	0.000	1.000	0.004
Bottom-up	11.36	.001	0.343	0.945	0.092
Combined	3.58	.059	0.172	0.987	0.028

Note. RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root mean square residual.

variance in dyadic adjustment when dancing (47%). The bottom-up model accounts for a large amount of variance in dyadic adjustment for the relationship (65%). Similarly, the combined model accounts for 44% of the variance in PDA-D and 66% of the variance in PDA-R.

The evidence brought forward by the fit statistics of all three models suggests that the top-down model yielded an overall better fit to the data. Although this cross-sectional data offers only limited tests of directionality, the results provide evidence of the mechanisms relating the interdependent effects of motivation and satisfaction between the relationship and a relational activity.²

Discussion

As self-determination theory has been shown to be a valuable framework in the prediction of psychological and behavioral outcomes across life domains, the general purpose of this study was to validate its usefulness in the applied contexts of intimate relationships and relational activities. More specifically, the objective was to compare the role of motivational factors and satisfaction factors in top-down and bottom-up predictions of perceived dyadic adjustment.

To begin with, a top-down model of the influence of relationship self-determination on perceived dyadic adjustment when dancing with a partner (PDA-D) evaluated the predictive weights of dancing self-determination and

²The analyses were conducted while controlling for the effects of a number of potential covariates: length of relationship, log of length of relationship, and years of experience in dance. In addition, they were conducted separately for males and females in order to examine gender differences. Analyses using the covariates provide findings that were not significantly different from the global results presented in this section, and no gender differences were observed.

perceived dyadic adjustment for the relationship (PDA-R). Subsequently, a bottom-up model of the influence of dancing self-determination on PDA-R evaluated the predictive weights of relationship self-determination and PDA-D. Finally, an alternative combined model of both top-down and bottom-up processes was tested. The results suggest evidence in support of top-down and bottom-up processes, providing a better understanding of the mutual and hierarchical influences of motivation and satisfaction at the relationship and activity levels.

Basic associations among tested constructs support the extant literature in a number of ways. First, in congruence with previous studies in intimate relationships based on SDT, relationship self-determination was substantially correlated with PDA-R (Blais et al., 1990; Knee et al., 2005). Second, in agreement with findings from Pelletier et al. (1996) examining SDT in the context of leisure activities, dancing self-determination was positively correlated with dancing satisfaction, as measured by PDA-D. Third, self-determined motivation at the relationship level and the activity level were significantly correlated, supporting postulates from the hierarchical model of extrinsic and intrinsic motivation (Vallerand, 1997). Finally, in accordance with previous findings in leisure and marital satisfaction, the strong correlation between both types of perceived dyadic adjustment also suggested evidence of hierarchical effects of satisfaction (Johnson et al., 2006).

Findings from correlational and SEM analyses supported the top-down influence of relationship self-determination on PDA-D. In addition to a direct effect of dancing self-determination on PDA-D, the model supported an indirect effect of relationship self-determination on PDA-D via dancing self-determination. Although the effect of PDA-R on PDA-D was not statistically significant, the model estimated a moderate relationship between the two types of satisfaction. A statistically significant relationship between these two factors could possibly be observed in future replication studies using larger sample sizes. In light of this top-down model, it appears that the reasons for which individuals engage in an intimate relationship could play a significant role in the level of satisfaction experienced when dancing. This model suggests that satisfaction in a relational activity not only depends on the motivation for practicing that activity, but also on the relationship context in which it occurs.

Analyses failed to demonstrate strong support for the bottom-up influence of dancing self-determination on PDA-R. Since ballroom dancing represents a particular relational activity among many others within the relationship, it may not have as strong an impact on the relationship as the latter may have on the former. This lower fit of the bottom-up model notwithstanding, statistically significant relationships were observed throughout the model. When taking dancing self-determination into account, both

relationship self-determination and PDA-D uniquely contributed to variance in PDA-R.

In addition to a direct effect of relationship self-determination on PDA-R, the model supported a direct effect of PDA-D on PDA-R. Furthermore, indirect effects of dancing self-determination on PDA-R were observed via both relationship self-determination and PDA-D. These results suggest that dancing self-determination can influence relationship satisfaction through bottom-up effects. This influence appears to function indirectly through both relationship and activity processes. On the one hand, high levels of dancing self-determination were related to high levels of relationship self-determination and, in turn, PDA-R. On the other hand, high levels of dancing self-determination were also related to high levels of PDA-D and, in turn, to PDA-R. In other words, although relationship satisfaction is associated with relationship-level variables (e.g., motivation), it appears that motivation and satisfaction in relationship-related activities (e.g., ballroom dancing) could also contribute to its variance. However, this model did not fit the data as well as the top-down model, suggesting that the bottom-up processes do not explain the relationship-activity interaction as well as the top-down processes.

As an alternative, a combined model of top-down and bottom-up processes was also tested. Assuming that relationship self-determination and dancing self-determination were both free to vary independently (i.e., one is not a direct cause of the other), this model examined the prediction of both PDA-D and PDA-R simultaneously. The findings reveal a direct effect of relationship self-determination on PDA-R and a direct effect of dancing self-determination on PDA-D. In addition, the model suggested that relationship self-determination was associated with variance in PDA-D, while dancing self-determination was not associated with variance in PDA-R. This more parsimonious model combines the cross-domain effects of motivation on satisfaction, but does not provide any estimation of the association between PDA-R and PDA-D. The overall fit to the data for this model was more adequate than the bottom-up model, but not as satisfactory as the top-down model.

When comparing all three models, it is clear that the top-down model presents the best overall fit with the data. This appears to indicate that the effects of relationship motivation on activity satisfaction are more dominant than the effects of motivation for the activity on relationship satisfaction. This is also reflected in the combined model. It is not surprising that relationship functioning would play a more important role in activity functioning than vice-versa. However, in light of the findings presented in this study, one should not disregard the demonstrated value of the bottom-up interactions between motivation for the relational activity and relationship satisfaction.

Practical Applications

The findings from this study present interesting implications that could contribute to interventions aimed at helping romantic partners. Although the overall fit of the bottom-up model was not as satisfactory as the top-down model, it suggests preliminary evidence in support of the role that relational activities play in the relationship. In accordance with previous literature, the results suggest that by engaging in a specific relational activity that both partners enjoy, couples can increase satisfaction in their relationships.

Research by Aron and colleagues (Aron, Normand, Aron, McKenna, & Heyman, 2000; Reissman, Aron, & Bergen, 1993) suggested that participating in new, arousing activities with a significant other was associated with increases in relationship quality experienced after the practice of such activities. There is also evidence that common day-to-day activities practiced as a couple foster marital satisfaction (Johnson et al., 2006). Overall, these studies show that satisfaction in a relational activity, regardless of the nature of the activity, is an integral component of relationship satisfaction.

Our findings provide a motivational framework that suggests a sequence in which self-determined motivation for the activity may influence relationship satisfaction. In other words, partners engaging in a relational activity out of pressure or external constraints (i.e., non-self-determined motivation) may be less likely to benefit from the experience at the relationship level than partners who practice the activity out of choice and pleasure (i.e., self-determined motivation). As such, interventions tailored to foster high levels of self-determined motivation in joint activities could improve long-term relationship satisfaction.

In a similar fashion, the findings from this study highlight the interdependence of the domain-specific and situation-specific levels. In much the same way that the activity can play a role in the relationship, the relationship also affects the activity. Therefore, it must be acknowledged that satisfaction in a relational activity depends in part on relationship self-determination. In other words, partners involved in a relationship for extrinsic motives are more likely to engage in an activity for equally extrinsic motives. Partners involved in a relationship for intrinsic motives are similarly more likely to engage in an activity for intrinsic motives.

In summary, this study shows that top-down effects are present between relationship- and activity-level processes. Furthermore, findings from the structural models offer preliminary evidence pointing to the influence of activity variables on relationship variables, even though the bottom-up model failed to have an overall satisfactory fit. Professionals working with couples should strive to tailor their interventions on these two complementary models. More specifically, counseling that fosters mindfulness and

autonomy support between partners can promote the development of self-determined motivation at both the relationship level and the activity level (Ryan & Deci, 2008).

Limitations and Suggestions for Future Research

This applied research holds the significant strength of examining active ballroom dancers involved in long-term relationships, rather than undergraduate students mostly occupied by dating relationships. Despite providing valuable insight, it also has noteworthy limitations. The data collected for this study were gathered using a correlational cross-sectional design, which restricts any conclusion regarding causality and directionality. Such a design also prevents the temporal examination of motivation and satisfaction effects. The findings from this study represent an explicit demonstration of this limitation. Although our hypotheses were theoretically supported, it remains statistically unfeasible to determine the actual order of association in our models. In other words, the first step in exploring our research question lends itself well to correlational data, but future research should seek to measure a minimum of two time points.

Any analyses using structural equation modeling should consider the existence of equivalent models. An *equivalent model* is a model that presents a different configuration of paths among the same observed constructs (Kline, 2005). Furthermore, equivalent models are mathematically identical, in the sense that they have the same fit indexes. For example, an alternative to the top-down model described in this study could present relationship satisfaction as a predictor of relationship self-determination, resulting in the same fit indexes as the original model. Such a model is not supported, however, by the theoretical perspectives presented in this article. While there may be other mathematically equivalent models to the ones presented in this study, we designed our top-down, bottom-up, and combined models to reflect the psychological processes brought forth by previous theoretical and empirical findings.

It must be taken into account that any research using self-reported measures, whether or not it involves socially sensitive issues, is limited by the occurrence of range restriction and self-selection bias. Some individuals may have decided not to participate in this study because of the nature of the topic under investigation, thereby limiting representation of the general population by the sample. Close inspection of the means and standard deviations for the two satisfaction scales suggests that the vast majority of participants were very satisfied. It should be considered that the current findings might not generalize to individuals who are very unsatisfied with their relationships.

Nevertheless, there is little theoretical evidence to suggest that the processes underlined by our results would be different for satisfied versus unsatisfied participants. Finally, it should also be noted that although self-report measures may offer great insight into people's thoughts and feelings, they are limited by social desirability bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Another limitation relates to the methodology that was used in the present study. More specifically, shared method variance could partly explain the strong associations between both types of motivations and between both types of satisfaction. Although we acknowledge that dancing self-determination and relationship self-determination were assessed using similar item formulation, the items themselves clearly measured the constructs within distinct contexts. The same standard applies for the perceived dyadic adjustment scales. Overall, the strong association between these variables is theoretically sound, and although shared method variance may have influenced the results, the influence—if present—was likely minimal.

The participants in this study consist of individuals involved in relationships, not couples. A consequent limitation is that the findings reflect only one partner's perspective. In some cases, both members of the relationship dyad took part in the study. Some level of nonindependence could thus be present in the data. However, there were no significant differences in the study variables between single-member participants and dyad participants. As such, nonindependence was not considered as a major issue in the data set. Future studies comprised of couples might consider investigating mutual motivation and satisfaction effects between partners. Another interesting avenue of research would be to compare the weighted influence of both partners, although no gender differences emerged in the present analyses.

To contribute further to our knowledge of couple functioning within the relationship and in relational activities, future studies could make use of comparison groups. More specifically, it would be worthwhile to compare relationship self-determination among romantic partners who dance and romantic partners who do not, and to compare dancing self-determination among romantic partners and nonromantic partners.

Overall, more research in applied social psychology is needed to examine whether the findings from the present study may be extended to other relational contexts. For example, future studies could investigate additional relational activities that necessitate a great deal of communication, collaboration, and trust, such as personal projects (e.g., buying a house, having a baby) or other leisure activities.

In closing, the findings from the present study offer insight into the role that reasons for engaging in an intimate relationship play in the motivational

and satisfaction processes involved in the practice of a specific activity with a romantic partner (i.e., ballroom dancing). The findings highlight the importance of domain-specific motivation and satisfaction and their top-down influence on more situation-specific motivation and satisfaction, contributing to a better understanding of why some people develop self-determined motivation in more specific life domains while others do not. The results also highlight the importance of bottom-up effects from the situation-specific level to the domain-specific level.

This study suggests that who we are as a couple impacts what we do as a couple and how satisfied we are when doing so. It also suggests that satisfaction in the activities we undertake as a couple can contribute to the overall quality of the relationship. From a practical and applied point of view, the present findings suggest that interventions aimed at helping romantic partners should focus on the relationship itself, as well as the activities the partners undertake together.

References

- Aimé, A., Sabourin, S., & Valois, P. (2000). L'appariement des styles de motivation et l'évolution de la satisfaction conjugale [The matching of motivation styles and the evolution of marital satisfaction]. *Revue Canadienne des Sciences du Comportement*, *32*, 178–186.
- Aron, A., Normand, C. C., Aron, E. N., McKenna, C., & Heyman, R. E. (2000). Couples' shared participation in novel and arousing activities and experienced relationship quality. *Journal of Personality and Social Psychology*, *78*, 273–284.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238–246.
- Blais, M. R., Sabourin, S., Boucher, C., & Vallerand, R. J. (1990). Toward a motivational model of couple happiness. *Journal of Personality and Social Psychology*, *59*, 1021–1031.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: Basic Books.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviors*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology*, *49*, 14–23.

- Gaine, G. S., & La Guardia, J. G. (2009). The unique contributions of motivations to maintain a relationship and motivations toward relational activities to relationship well-being. *Motivation and Emotion, 33*, 184–202.
- Iso-Ahola, S. E. (1979). Basic dimensions of definitions of leisure. *Journal of Leisure Research, 11*, 28–39.
- Johnson, H. A., Zabriskie, R. B., & Hill, B. (2006). The contribution of couple leisure involvement, leisure time, and leisure satisfaction to marital satisfaction. *Marriage and Family Review, 40*, 69–91.
- Jöreskog, K. G., & Sörbom, D. (2003). *LISREL 8.54 for Windows* [Computer software]. Lincolnwood, IL: Scientific Software International.
- Kelly, J. R. (1982). *Leisure*. Englewood Cliffs, NJ: Prentice Hall.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford.
- Knee, C. R., Lonsbary, C., Canevello, A., & Patrick, H. (2005). Self-determination and conflict in romantic relationships. *Journal of Personality and Social Psychology, 89*, 997–1009.
- Knee, C. R., Patrick, H., Vietor, N. A., Nanayakkara, A., & Neighbors, C. (2002). Self-determination as growth motivation in romantic relationships. *Personality and Social Psychology Bulletin, 28*, 609–619.
- La Guardia, J. G., & Patrick, H. (2008). Self-determination theory as a fundamental theory of close relationships. *Canadian Psychology, 49*, 201–209.
- Neulinger, J. (1981). *The psychology of leisure* (2nd ed.). Springfield, IL: Charles C. Thomas.
- Patrick, H., Knee, C. R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology, 92*, 434–457.
- Pelletier, L. G., Vallerand, R. J., Green-Demers, I., Blais, M. R., & Brière, N. M. (1996). Vers une conceptualisation motivationnelle multidimensionnelle du loisir: Construction et validation de l'échelle de motivation vis-à-vis des loisirs (EML) [Towards a multidimensional motivational conception of leisure: Construction and validation of the Leisure Motivation Scale]. *Loisir et Société, 19*, 559–585.
- Podsakoff, P. M., MacKenzie, S. M., Lee, J., & Podsakoff, N. P. (2003). Common method variance in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879–903.
- Reissman, C., Aron, A., & Bergen, M. R. (1993). Shared activities and marital satisfaction: Causal direction and self-expansion versus boredom. *Journal of Social and Personal Relationships, 10*, 243–254.

- Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in close relationships. *Journal of Personality and Social Psychology*, *49*, 95–112.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*, 749–761.
- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality*, *74*, 1557–1586.
- Ryan, R. M., & Deci, E. L. (2008). A self-determination theory approach to psychotherapy: The motivational basis to effective change. *Canadian Psychology*, *49*, 186–193.
- Sabourin, S., Valois, P., & Lussier, Y. (2005). Development and validation of a brief version of the Dyadic Adjustment Scale with a nonparametric item analysis model. *Psychological Assessment*, *17*, 15–27.
- Seligman, C., Fazio, R. H., & Zanna, M. P. (1980). Effects of salience of extrinsic rewards on liking and loving. *Journal of Personality and Social Psychology*, *38*, 453–460.
- Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*, *38*, 15–28.
- Tabachnick, B., & Fidell, L. (2000). *Using multivariate statistics* (4th ed.). New York: Allyn & Bacon.
- Tinsley, H. E., & Tinsley, D. J. (1986). A theory of the attributes, benefits, and causes of leisure experience. *Leisure Sciences*, *8*, 1–45.
- Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. *Advances in Experimental Social Psychology*, *29*, 271–360.
- Vallerand, R. J. (2007). A hierarchical model of intrinsic and extrinsic motivation for sport and physical activity. In M. S. Hagger & N. L. D. Chatzisarantis (Eds.), *Intrinsic motivation and self-determination in exercise and sport* (pp. 255–280). Champaign, IL: Human Kinetics.