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The role of supervisor autonomy support, organizational support, and autonomous and controlled motivation in predicting employees' satisfaction and turnover intentions

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Using self-determination theory (Deci & Ryan, 2008) as the guiding theoretical framework, the present study tested a model that incorporates workers' perceptions of organizational support and supervisor autonomy support, global and domain specific (i.e., work) motivation, work satisfaction, and turnover intentions. The hypothesized model was tested using a sample of 735 workers (362 men and 373 women). Results revealed that work motivation was significantly related to both intraindividual (global motivation) and contextual factors (organizational support and supervisor autonomy support). In addition, perceived organizational support and work autonomous motivation were positively related to work satisfaction, whereas turnover intentions were negatively related to perceived organizational support and work autonomous motivation, and positively related to work controlled motivation. The present results underscore the importance of understanding the mechanisms through which higher turnover intentions and lower worker satisfaction take place, eventually leading to appropriate interventions.

Keywords: Autonomy support; Motivation; Perceived organizational support; Satisfaction; Self-Determination Theory; Turnover intentions.

Gagné and Deci (2005) argued that self-determination theory (SDT; Deci & Ryan, 1985b, 2000, 2008; Ryan & Deci, 2000) is a motivational framework that is relevant to the work context. The present study set out to test their proposed model, which includes personal and organizational antecedents, and individual outcomes, in the French context. SDT distinguishes between autonomous (or self-determined) motivation and controlled (or non-self-determined) motivation. Autonomous motivation means that the person behaves with a full sense of volition and choice, while controlled motivation entails that the person engages in an activity with an experience of pressure and control (Deci & Ryan, 2008). SDT posits that autonomous motivation reflects the highest quality of regulation and some organizational studies have shown that it is associated to positive outcomes such as organizational citizenship behaviours, affective and norma-

tive commitment, satisfaction, and performance (e.g., Dysvik & Kuvaas, 2008; Gagné, Chemolli, Forest, & Koestner, 2008; Gagné, Forest, Gilbert, Aubé, Morin, & Malorni, 2010). In contrast, controlled motivation is generally associated to negative outcomes such as turnover intentions, psychological distress, and emotional exhaustion (e.g., Dysvik & Kuvaas, 2008, 2010; Gagné et al., 2010; Grant & Sonnentag, 2010).

Past research based on the hierarchical model of motivation (Vallerand, 1997), especially in sport and physical activity, has looked at the relations between contextual factors, motivation, and outcomes (e.g., Gillet, Berjot, & Gobancé, 2009; Lavigne, Vallerand, & Miquelon, 2007; see Vallerand, Carbonneau, & Lafrenière, 2009, for a review). However, few studies in the work domain have included both determinants (e.g., organizational support, supervisor autonomy support) and consequences (e.g., satisfaction, turn-

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over intentions) of work motivation, and few have examined the links between both personal and contextual factors, and the various types of motivation in the work domain. Accordingly, the goal of the present research was to test a model that incorporates workers' perceptions of organizational support and supervisor autonomy support, motivation, work satisfaction, and turnover intentions (see Figure 1). Such a model would provide a blueprint of steps to take in order to facilitate employee satisfaction and to reduce turnover intentions in the workplace. While one purpose of the present research pertains to the role that organizational support and supervisor autonomy support plays in employee work motivation, satisfaction, and turnover intentions, it is important to also consider the role of individual factors (e.g., global motivation; see Baruch, 2006). Exploring the impact that organizational and individual difference variables have on work motivation, satisfaction, and turnover intentions will result in a more comprehensive understanding of these relationships.

SUPPORT AS DETERMINANT OF WORK MOTIVATION

Two determinants of work motivation were examined. The first is a proximal source of support, which is support from the direct supervisor. Within SDT,

autonomy support has to date been the most studied social-contextual factor for predicting autonomous motivation (e.g., Black & Deci, 2000; Muraven, Gagné, & Rosman, 2008; Pelletier, Fortier, Vallerand, & Brière, 2001). In the work setting, the interpersonal context is said to be autonomy-supportive when managers provide a meaningful rationale for doing the tasks, emphasize choice rather than control, and acknowledge employees' feelings and perspective (Deci, Connell, & Ryan, 1989; Hardré & Reeve, 2009). Past research has shown that autonomy-supportive interpersonal environments lead to autonomous motivation, which was in turn associated with positive outcomes in different settings such as work (e.g., Deci et al., 2001; Gagné, Koestner, & Zuckerman, 2000; Gagné, Senécal, & Koestner, 1997) and sport (e.g., Gillet, Vallerand, Amoura, & Baldes, 2010; Gillet, Vallerand, Paty, Gobancé, & Berjot, 2010). For instance, Hardré and Reeve (2009) showed, through an intervention-based experimental design, that when managers displayed an autonomy-supportive managerial style, the employees under their supervision were more autonomously motivated and more engaged in their work than were employees supervised by control-group managers (i.e., managers who did not participate in the training programme). In a study among public sector employees, Kuvaas (2009) found that employees' perceptions of supervisor autonomy sup-

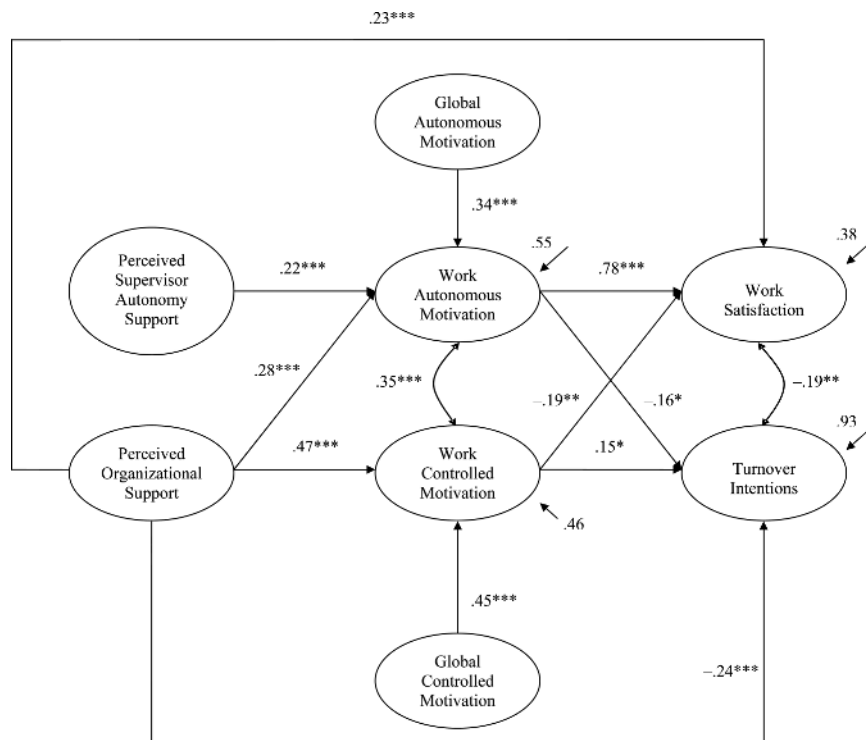


Figure 1. Results from the structural equation analysis. All coefficients were standardized. All relationships are significant, * $p < .05$, ** $p < .01$, *** $p < .001$. For the sake of clarity, the measurement model is not presented and covariances among error terms are not shown.

port positively predicted autonomous motivation, which was in turn positively related to work performance. Therefore, our first hypothesis is that workers' perceptions of autonomy support from their supervisor should be positively related to their autonomous motivation. According to SDT, autonomy support is posited to facilitate the needs for autonomy, competence, and relatedness, which are strongly related to autonomous motivation, but not to controlled motivation. Ryan and Deci (2002) thus postulated that autonomy support should be significantly linked to autonomous motivation, but not to controlled motivation. Moreover, recent research has shown no significant relationships between autonomy support and controlled motivation (e.g., Chan, Hagger, & Spray, 2011; Lavergne, Sharp, Pelletier, & Holtby, 2010). Therefore, we do not hypothesize any link between autonomy support and controlled motivation.

Hypothesis 1a: Perceptions of supervisor autonomy support will be positively related to employee autonomous work motivation.

The second source of support, a more distal one, comes from one's general relationship to one's employer. Perceived organizational support is the degree to which employees believe that their organization values their contributions and cares about their well-being (Eder & Eisenberger, 2008; Eisenberger, Huntington, Hutchison, & Sowa, 1986). Though the study of perceived organizational support has received considerable attention in the literature (for a review, see Rhoades & Eisenberger, 2002), only one study to the best of our knowledge has looked at the role of perceived organizational support in the prediction of workers' motivation according to SDT. In a sample of 881 pilots from a commercial airline company, Gagné and her colleagues (2010) found that perceived organizational support was positively linked both to autonomous and to controlled forms of motivation. The result relative to controlled motivation is somewhat surprising and needs to be replicated in other samples of workers.

Hypothesis 1b: Perceived organizational support will be positively related to employee autonomous work motivation.

INDIVIDUAL DIFFERENCE AS DETERMINANT OF WORK MOTIVATION

Several researchers (e.g., Gagné & Deci, 2005; Vallerand, 1997) also posit that workers' motivation

towards their job (i.e., contextual motivation) should be influenced by their global motivation. In the hierarchical model of motivation, Vallerand and his colleagues (e.g., Vallerand, 1997, 2007; Vallerand et al., 2009) postulated that autonomous and controlled motivation exist at three levels of generality: global, contextual, and situational. Global motivation refers to individual differences in people's orientations towards the initiation and regulation of their behaviour. Motivation at the contextual level pertains to the reasons why individuals pursue activities in a specific context (e.g., work, education, sport). Finally, situational motivation concerns the motivation that a person experiences towards an activity at a specific point in time.

Motivation at one level of the hierarchy results from motivation at the next higher level (i.e., the top-down effect). Thus, Vallerand (1997) considers that the degree of global autonomous motivation should predict people's autonomous motivation towards their work. Similarly, workers' controlled motivation would be predicted by their global controlled motivation. Past research (e.g., Guay, Mageau, & Vallerand, 2003; Lam & Gurland, 2008; Williams, Grow, Freedman, Ryan, & Deci, 1996) provided some evidence for the significant relationship between motivation at the global level assessed with the General Causality Orientations Scale (Deci & Ryan, 1985a) or the Global Motivation Scale (Guay et al., 2003), and motivation at the contextual level. For instance, Guay and his colleagues (2003) found in 1-year and 5-year prospective studies that global motivation predicted how students regulate their behaviour in the school context. However, this link has yet to be examined in the workplace. Given the importance of better understanding the determinants of individual motivation (Vallerand, 2007), the present study set out to test the role of global motivation as an additional antecedent of work motivation.

Hypothesis 2: Global autonomous motivation and global controlled motivation will be positively related to autonomous work motivation and controlled work motivation, respectively.

MOTIVATION-OUTCOME RELATIONSHIPS

According to SDT, higher levels of motivation do not necessarily yield more optimal outcomes if the motivation is controlled rather than autonomous. Dozens of studies have indeed shown that autonomous motivation leads to more positive consequences (e.g., more positive affect, enhanced performance) than controlled motivation (see Deci & Ryan, 2008,

for a review in different settings). In the work domain, some studies have examined the link between the different forms of motivation and a variety of outcomes in organizational settings including satisfaction (e.g., Bono & Judge, 2003; Lam & Gurland, 2008; Richer, Blanchard, & Vallerand, 2002) and turnover intentions (e.g., Dysvik & Kuvaas, 2008, 2010; Kuvaas & Dysvik, 2010). For instance, Lam and Gurland (2008) showed that autonomous work motivation positively predicted job satisfaction, whereas Dysvik and Kuvaas (2008) found that it was negatively associated with turnover intentions. In addition, controlled motivation was positively related to turnover (e.g., Pelletier et al., 2001) and negatively to satisfaction (e.g., Salinas-Jiménez, Artés, & Salinas-Jiménez, 2010).

Hypothesis 3a: Autonomous work motivation will be positively related to work satisfaction and negatively related to turnover intentions.

Hypothesis 3b: Controlled work motivation will be positively related to turnover intentions and negatively related to work satisfaction.

As mentioned earlier, we investigated the role of global motivation, perceptions of supervisor autonomy support, and perceived organizational support in the prediction of work motivation as well as the relationships between work motivation and satisfaction and turnover intentions. The hierarchical model of motivation (Vallerand, 1997) posits that the effects of global motivation on work outcomes are mediated by work motivation. In line with this postulate and previous findings in the work domain (Lam & Gurland, 2008), we hypothesized that work motivation would be a significant mediator in the relationship between global motivation and work outcomes. Results from prior studies (e.g., Pelletier et al., 2001) also revealed that supervisors' autonomy-supportive behaviours promoted autonomous motivation, which was in turn associated with positive outcomes. We thus hypothesized that the relationship between perceptions of supervisor autonomy support and work satisfaction would be fully mediated by autonomous work motivation.

Hypothesis 4: Work motivation will fully mediate the effects of global motivation and perceptions of supervisor autonomy support on work outcomes.

Finally, we hypothesized that work motivation would only be a partial mediator of the perceived organizational support-outcome relationships, as other organizational and personal factors besides motivation could mediate these links. Indeed, organizational support theory identifies eight key pro-

cesses for the positive links between perceived organizational support and favourable outcomes: personification of the organization, organizational discretion, organization sincerity, organizational embodiment, felt obligation, reward expectancy, socio-emotional need fulfilment, and anticipated help (see Eisenberger & Stinglhamber, 2011). As mentioned earlier, perceived organizational support was positively associated with autonomous motivation (Gagné et al., 2010) and autonomous motivation was significantly related to various work outcomes (e.g., Kuvaas & Dysvik, 2010; Richer et al., 2002).

In a study with employees of various work organizations conducted by Eisenberger, Cummings, Armeli, and Lynch (1997), perceived organizational support and job satisfaction were found to be strongly related. A positive relationship between perceived organizational support and worker satisfaction has also been found in numerous studies (e.g., Eisenberger, Armeli, Rexwinkle, Lynch, & Rhoades, 2001; Gyekye & Salminen, 2009; Michael, Evans, Jasen, & Haight, 2005). In addition, several researchers have shown that the relationship between perceived organizational support and turnover intentions was negative (e.g., Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Rhoades, Eisenberger, & Armeli, 2001; Wayne, Shore, & Liden, 1997). Therefore, we hypothesized that perceived organizational support would have both direct and indirect (via work autonomous motivation) effects on worker satisfaction and turnover intentions.

Hypothesis 5a: Perceived organizational support will be positively related to employee work satisfaction.

Hypothesis 5b: Perceived organizational support will be negatively related to employee turnover intentions.

Hypothesis 5c: Work motivation will partially mediate the effects of perceived organizational support on work satisfaction and turnover intentions.

THE PRESENT RESEARCH

This review paints the following picture. First, supervisors' autonomy-supportive behaviours have been found to consistently facilitate autonomous motivation. Second, autonomous motivation leads to the most positive outcomes, whereas controlled motivation predicts negative consequences. Third, while much research supports the top-down effect between the contextual and situational levels (e.g., Blanchard, Mask, Vallerand, de la Sablonnière, & Provencher, 2007; Gillet, Vallerand, Amoura, &

Baldes, 2010), few studies so far have tested the top-down effect from the global level to the contextual level. Finally, more research is needed to examine whether perceived organizational support may influence work outcomes, especially concerning the mediating role of autonomous and controlled motivation. Indeed, recent investigations using organizational support theory (e.g., Panaccio & Vandenberghe, 2009; Tremblay, Cloutier, Simard, Chênevert, & Vandenberghe, 2010; see Eisenberger & Stinglhamber, 2011, for a review) have shown that perceived organizational support has indirect effects (via affective commitment or trust in the organization) on different work outcomes (e.g., employee well-being). However, no research to date has examined how autonomous and controlled motivation may explain the relations of contextual (i.e., perceptions of supervisor autonomy support and perceived organizational support) and individual (i.e., global motivation) factors to satisfaction and turnover intentions. This constitutes the main purpose of the present research.

METHOD

Participants and procedure

A convenient sample of 735 workers (362 men and 373 women) from various French companies participated in the present study. Questionnaires were distributed and collected by seven undergraduate students in several companies in the area of Tours, France. In each organization, participants received a questionnaire packet, a cover letter explaining the study and a consent form stressing the fact that their participation was confidential and voluntary. They were also assured that their managers would not see their responses. They completed the questionnaires and gave them directly back to the undergraduate student. The age of the participants ranged from 18 to 65 years, with a mean age of 35.98 years ($SD = 10.82$). One hundred and eighty-one participants worked in a company that comprised less than 50 employees, 202 were in a company that employed between 50 and 499 persons, and 349 were in a company that had over 500 employees (three participants did not specify the size of their company).

Measures

Perceived autonomy support. Workers' perceptions of supervisor autonomy support were assessed with the French version (Gillet, Vallerand, Paty, et al., 2010) of the Perceived Autonomy Support Scale for Exercise Settings (Hagger et al., 2007) adapted to the work domain. This questionnaire is a 12-item self-

report measure assessing the extent to which employees perceive their manager to be autonomy-supportive (e.g., "I feel that my manager provides me with choices, options, and opportunities about whether to do my work"). Answers are given on a Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Results of past studies (e.g., Gillet, Vallerand, Amoura, & Baldes, 2010; Gillet, Vallerand, Paty, et al., 2010) revealed that this scale was a valid and reliable measure of perceived autonomy support.

Perceived organizational support. Perceived organizational support was measured with a translated eight-item version of the Perceived Organizational Support Scale developed by Eisenberger et al. (1986). The scale includes two items that are reverse scored (e.g., "The organization shows very little concern for me") and respondents are asked to indicate the extent to which they agree with the eight statements on a 7-point scale from 1 ("not at all agree") to 7 ("totally agree"). Past studies used exploratory and confirmatory factor analyses with employees from diverse occupations and organizations and provided evidence for the high internal reliability and unidimensionality of the scale (see Rhoades & Eisenberger, 2002).

Global motivation. Employee motivation at the global level was evaluated using the French 18-item version of the Global Motivation Scale (Guay, Blais, Vallerand, & Pelletier, 1999; Guay et al., 2003). This questionnaire assesses the constructs of intrinsic motivation, identified regulation, introjected regulation, and external regulation towards life in general. All items are measured on a 7-point Likert scale ranging from 1 ("do not agree at all") to 7 ("very highly agree"). The scale has demonstrated acceptable reliability and validity in previous research (e.g., Guay et al., 1999, 2003; Ratelle, Vallerand, Chantal, & Provencher, 2004). Intrinsic motivation and identified regulation subscales were combined into an autonomous motivation index, while a controlled motivation index was computed by summing the introjected regulation and external regulation subscales (e.g., Lavergne et al., 2010; Zhou, Ma, & Deci, 2009), thus reducing the number of variables in the tested models.

Work motivation. Work motivation was assessed with the French version of the Motivation at Work Scale (MAWS; Gagné et al., 2010). This scale includes 12 items that reflect four types of motivation identified by Deci and Ryan (1985b). Ranging from most to least autonomous, these constructs are: intrinsic motivation (e.g., "for the moments of pleasure that this job brings me"),

identified regulation (e.g., “because this job fulfils my career plans”), introjected regulation (e.g., “because my work is my life and I don’t want to fail”), and external regulation (e.g., “because this job affords me a certain standard of living”). Participants are asked to indicate for each statement to what degree they correspond to one of the reasons for which they are doing their job on a 7-point scale ranging from 1 (“does not correspond at all”) to 7 (“corresponds very strongly”). The reliability of the MAWS has been demonstrated by confirmatory factor analyses with language invariance tests, and evidence for its validity is good (Gagné et al., 2010). As was done with global motivation, the different types of motivation were combined into autonomous (intrinsic motivation and identified regulation) and controlled (introjected regulation and external regulation) motivation scores (Gagné et al. have shown support for a second-order factor model). The factorial structure of the MAWS was evaluated using an exploratory factor analysis. Four factors were extracted and factor loadings of the matrix structure ranged from .48 to .88. The factors were well-defined with one cross-loading. Indeed, an identified regulation item (“because this job fits my personal values”) loaded .64 on the intrinsic motivation factor. Since the two subscales were averaged, this should not affect the results.

Work satisfaction. Work satisfaction was assessed with the “Echelle de Satisfaction de Vie Professionnelle” (The Satisfaction with Professional Life Scale; Fouquereau & Rioux, 2002). This scale is composed of five items derived from the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Responses are made on a scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). Five studies conducted by Fouquereau and Rioux (2002) indicated adequate psychometric properties for this scale.

Turnover intentions. Turnover intentions were assessed by four items (e.g., “I will probably look

for a new job next year”; “I may quit my present job this year”) used by Kuvaas and his colleagues (e.g., Dysvik & Kuvaas, 2008; Kuvaas, 2006; Kuvaas & Dysvik, 2010).

RESULTS

Preliminary analyses

Table 1 presents the means, standard deviations, and internal reliability coefficients of the study variables, which were all above the minimum criterion of .70 (Nunnally, 1978), as well as correlations between the variables. An examination of the size and direction of the correlations reveal good preliminary support for the hypotheses. For instance, global autonomous motivation and global controlled motivation were positively correlated with work autonomous motivation and work controlled motivation, respectively. Moreover, perceived organizational support was positively correlated with work satisfaction and negatively correlated with turnover intentions.

Main analyses

We tested a full structural model with LISREL 8 (Jöreskog & Sörbom, 1996). The analyses were conducted on covariance matrices and the solutions were generated on the basis of maximum-likelihood estimation. The hypothesized model tested was composed of eight latent variables and 53 indicators (eight for perceived organizational support, 12 for perceptions of autonomy support, six for global autonomous motivation, six for global controlled motivation, six for autonomous work motivation, six for controlled work motivation, five for work satisfaction, and four for turnover intentions). Paths were specified according to the hypotheses. Because the correlation between work autonomous motivation and work controlled motivation was substantial (see Table 1), the two variables were free to covary with each other. In addition, a negative covariance was estimated between work satisfaction

TABLE 1
Means, standard deviations, alpha reliabilities, and correlations for study variables

Variables	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
1. Perceived supervisor autonomy support	4.66	1.26	.95							
2. Perceived organizational support	4.02	1.21	.65**	.87						
3. Global autonomous motivation	4.98	0.95	.34**	.21**	.79					
4. Global controlled motivation	3.79	1.19	.19**	.15**	.38**	.81				
5. Work autonomous motivation	4.16	1.31	.51**	.41**	.44**	.24**	.88			
6. Work controlled motivation	3.31	1.13	.36**	.44**	.24**	.38**	.48**	.77		
7. Turnover intentions	2.63	1.82	-.25**	-.27**	-.03	-.06	-.24**	-.08*	.93	
8. Work satisfaction	4.26	1.37	.47**	.48**	.26**	.15**	.68**	.40**	-.37**	.89

* $p < .05$, ** $p < .001$. Alpha coefficients are reported on the diagonal.

and turnover intentions. Results from Lagrange Multiplier tests suggested the addition of a path between perceived organizational support and work controlled motivation. We did not expect a significant positive link between perceived organizational support and work controlled motivation but this link could be justified. Indeed, findings from past research (e.g., Gagné et al., 2010) showed that perceived organizational support was significantly correlated with introjected regulation (i.e., a form of controlled motivation; see Deci & Ryan, 2008). A path was thus specified between perceived organizational support and work controlled motivation. All estimated paths were significant and the goodness of fit of the model was adequate. The chi-square value was not significant, $\chi^2(1253, N=689)=3764.96$, $p > .05$, and the other fit indices were satisfactory, NNFI = .97, CFI = .97, IFI = .97, RFI = .95, and RMSEA = .05.¹

As shown in Figure 1, supervisor autonomy support, organizational support and global autonomous motivation were positively related to work autonomous motivation, which was positively related to work satisfaction and negatively related to turnover intentions. Perceived organizational support and global controlled motivation were significantly related to work controlled motivation. Work controlled motivation was positively related to turnover intentions and negatively to work satisfaction. Finally, perceived organizational support was linked positively to work satisfaction and negatively to turnover intentions.²

Sobel (1982) tests supported statistically significant indirect effects (via autonomous work motivation) from perceptions of autonomy support to work satisfaction, $z=4.18$, $p < .001$, and turnover intentions, $z=-2.13$, $p < .05$, from global autonomous motivation to work satisfaction, $z=6.72$, $p < .001$, and turnover intentions, $z=-2.33$, $p < .05$, and from perceived organizational support to work satisfaction, $z=4.87$, $p < .001$, and turnover intentions, $z=-2.21$, $p < .05$. Sobel tests also showed that the indirect effects (via controlled work motivation) of global controlled motivation on turnover intentions, $z=1.98$, $p < .05$, and work satisfaction, $z=-2.88$, $p < .01$, and perceived organizational support on turnover intentions, $z=1.98$, $p < .05$, and work satisfaction, $z=-2.87$, $p < .01$, were statistically significant. Therefore, work motivation is a partial mediator of the relationships between perceived

organizational support and work outcomes (i.e., satisfaction and turnover intentions). In addition, work motivation fully mediates the relationships of global motivation and perceptions of supervisor autonomy support to work outcomes.

DISCUSSION

Using SDT as a guiding framework (Deci & Ryan, 1985b), the present study was conducted to examine the links between perceptions of organizational support and supervisor autonomy support, global and work motivation, satisfaction, and turnover intentions in the workplace. More precisely, we first examined the effects of two contextual factors (i.e., perceptions of organizational support and supervisor autonomy support) and global motivation on work motivation. We found that workers' perceptions of organizational support and supervisor autonomy support were positively related to their autonomous work motivation. These results are in agreement with prior studies in organizational settings (e.g., Gagné et al., 2010) and underscore the role of social factors as motivational determinants.

Our findings also revealed that perceived organizational support was significantly and positively associated with work controlled motivation. Gagné et al. (2010) also showed that perceived organizational support was positively linked with controlled motivation. Taken together, these results suggest that perceived organizational support is positively related to both autonomous and controlled motivation. This is somewhat surprising as autonomous motivation and controlled motivation are then positively and negatively related to turnover intentions, respectively. Further work could examine more closely why perceived organizational support would have such an effect on controlled motivation. Perhaps some aspects of support affect autonomous motivation, while others affect controlled motivation. Alternatively, Burnett, Williamson, and Bartol (2009) have shown that personality (i.e., conscientiousness and extraversion) acted as a moderator of the interactive effect of procedural fairness perceptions and outcome favourability on employee's job attitudes. Kraimer, Seibert, Wayne, Liden, and Bravo (2011) have shown that perceived career opportunity within the organization moderates the relationship between perceived organizational support for development and employee performance and turnover. Perhaps individual (e.g., personality traits, perfectionism dimensions, global self-esteem) and contextual (e.g., feedback about performance, social acceptance, job characteristics) factors could moderate the relation between perceived organizational support and controlled motivation.

¹ An alternative model where autonomy support predicted perceived organizational support (see Rhoades & Eisenberger, 2002) was tested, but this model did not offer a better fit to the data than did the proposed model.

² No interactions between global motivation and the two sources of support were found on work autonomous motivation and work controlled motivation.

Second, results from the present study showed that global autonomous and controlled motivation significantly and positively predicted employees' autonomous and controlled work motivation, respectively. These results are consistent with past research conducted in various domains showing top-down effects from traits to states (e.g., Guay et al., 2003; Lavigne & Vallerand, 2010), and yielded additional support for the hierarchical model of motivation (Vallerand, 1997). Of major importance is the fact that the present results are the first, in the work setting, to support the significant and positive relationships between autonomous and controlled motivation at the global and contextual levels. This study is also the first in the work domain to show that the effects from the social and individual factors on work autonomous and controlled motivation can take place simultaneously and independently. Future research is needed in order to replicate these findings and determine their generality.

Third, the present findings revealed that work autonomous motivation was positively associated with work satisfaction and negatively associated with turnover intentions, while work controlled motivation positively related to turnover intentions and negatively related to work satisfaction. With respect to the relative contribution of autonomous and controlled motivation in the prediction of turnover intentions, the present results demonstrated no significant differences. Of additional interest was the fact that the predictive role of autonomous motivation on work satisfaction was stronger than that of controlled motivation. These findings speak to the importance of autonomous motivation in predicting work satisfaction. Because the effect of autonomous motivation is relatively strong, it is likely to be obtained in a variety of situations. Such may not be the case for controlled motivation. The present results are in line with past research on the role of motivation in the prediction of satisfaction and dropout intentions in organizational settings (e.g., Bono & Judge, 2003; Dysvik & Kuvaas, 2008).

According to Deci and Ryan (2008, p. 14), "SDT assumes that people are by nature active and self-motivated". Therefore, a worker who acts with a full sense of volition and choice (i.e., to be autonomously motivated) experiences more positive states than a worker who acts with a feeling of pressure that comes from forces perceived to be external to the self (i.e., to exhibit controlled motivation). More generally, our findings provided support for SDT-derived models (e.g., Gagné & Deci, 2005) and concurs with past research in various settings (e.g., work, education, sport), which have shown that the more autonomous the motivation, the more adaptive the outcomes, and the more controlled the motivation, the less adaptive the outcomes. Such findings have been

obtained with outcomes as diversified as interest (e.g., Blanchard et al., 2007; Levesque & Pelletier, 2003), performance (e.g., Boiché, Sarrazin, Grouzet, Pelletier, & Chanal, 2008; Bono & Judge, 2003; Gillet, Berjot, & Paty, 2010), and burnout (e.g., Cresswell & Eklund, 2005; Lonsdale, Hodge, & Rose, 2009).

Finally, as hypothesized, the present results revealed that autonomous motivation fully mediated the following relationships: perceptions of autonomy support–work satisfaction; perceptions of autonomy support–turnover intentions; global autonomous motivation–work satisfaction; and global autonomous motivation–turnover intentions. Moreover, controlled motivation fully mediated the relations between global controlled motivation and work satisfaction, and between global controlled motivation and turnover intentions. These findings confirm those obtained in prior research (e.g., Lam & Gurland, 2008; Pelletier et al., 2001). In addition, our results showed that satisfaction and turnover intentions in the work setting were both predicted by work motivation and perceived organizational support. In other words, perceived organizational support has both direct and indirect effects (via work autonomous and controlled motivation) on work satisfaction and turnover intentions. These results concur with those of previous studies where perceived organizational support was found to be negatively and positively associated with turnover intentions and satisfaction, respectively (e.g., Eisenberger et al., 1997; Rhoades et al., 2001). Eisenberger and his colleagues (2001) have found that perceived organizational support had both direct and indirect associations (via felt obligations) with affective commitment. Our results thus confirm that it is important to consider mediators when examining the role of organizational and individual difference variables to explain work outcomes. Future research might examine the role of other mediators in these relationships. For instance, Baard, Deci, and Ryan (2004) have shown that the satisfaction of psychological needs for competence, autonomy, and relatedness (Deci & Ryan, 2008) was a mechanism through which organizational and individual difference variables had effects on different work outcomes (e.g., workers' adjustment). Future research on the role of basic need satisfaction would appear promising.

The present findings also have some practical implications for promoting worker satisfaction and preventing quit intentions in organizational settings. Our findings suggest that perceived organizational support and supervisor autonomy support lead to an increase in their subordinates' autonomous work motivation, and thus facilitate the development of their satisfaction and the reduction of their turnover intentions. Therefore, perceived organizational

support and supervisor autonomy support play key roles in the promotion of satisfaction and the prevention of turnover. In light of these results, it appears important for researchers to identify factors that enhance perceived organizational support as well as encourage supervisors' to be autonomy supportive. First, Rhoades and Eisenberger (2002) showed that fairness, supervisor support, and rewards/job conditions increase perceived organizational support. However, results from a short intervention study conducted by Pazy, Ganzach, and Davidov (2006), revealed that the intervention (aimed at enhancing occupational choice skills) did not increase perceived organizational support. Second, there is a dearth of research on the factors that lead a supervisor to adopt an autonomy-supportive style even if a few recent intervention studies showed that people can learn how to become more autonomy-supportive in their interactions with others (e.g., Deci et al., 1989; Hardré & Reeve, 2009; Reeve & Jang, 2006; Reeve, Jang, Carrell, Jeon, & Barch, 2004). For instance, results from an intervention-based experimental study conducted by Hardré and Reeve (2009) revealed that managers who received training on how to be more autonomy-supportive with their employees displayed more autonomy-supportive behaviours than did nontrained managers in a control group. In addition, employees in the experimental condition were more autonomously motivated and engaged in their work than those in the control condition. From an applied perspective, future research is still needed to examine potential precursors of organizational support and supervisors' interpersonal behaviour.

The present study has some limitations. First, our design was correlational in nature and we thus cannot infer causality from the present results. Future research using longitudinal and experimental designs should be conducted in order to better understand the effects of organizational support, supervisor autonomy support, and motivation on work satisfaction and turnover intentions. Second, autonomous and controlled motivation was assessed with the MAWS (Gagné et al., 2010), which was recently validated in convenient samples of Canadian workers, and does not include an amotivation (i.e., the absence of motivation) subscale. Amotivation is a serious maladaptive form of motivation causing rapid dropout (see Deci & Ryan, 1985; Pelletier et al., 2001) that would be worth examining in future research. Adding this scale to the MAWS is thus advisable. Third, all the outcomes assessed in the present study were assessed with self-reported measures. Such measures can be impacted by social desirability, and we thus encourage researchers to conduct additional research using objective assessment of outcomes. For instance, it will be important

in future research to consider both turnover intentions and actual turnover behaviour because intentions represent a proximal predictor of behaviour (Ajzen, 1985; for an example, see Chau, Dahling, Levy, & Diefendorff, 2009). Finally, the present sample only comprised workers from one country (France). Future research with workers from different cultures is needed to replicate and extend the present results.

In sum, the present results provide strong support for SDT (Deci & Ryan, 1985b) and its applicability in the work context. Our findings contribute to our understanding of the role of organizational support, supervisor autonomy support, and workers' motivation in the prediction of their satisfaction and turnover intentions. Future research is needed, however, in order to investigate how social factors and motivation interact to enhance work satisfaction and reduce turnover intentions.

REFERENCES

- Ajzen, I. (1985). From intentions to actions: A theory of planned behaviour. In J. Kuhl & J. Beckman (Eds.), *Action-control: From cognition to behaviour* (pp. 11–39). New York, NY: Springer.
- Baard, P. P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology, 34*, 2045–2068.
- Baruch, Y. (2006). Career development in organizations and beyond: Balancing traditional and contemporary viewpoints. *Human Resource Management Review, 16*, 125–138.
- Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*, 740–756.
- Blanchard, C., Mask, L., Vallerand, R. J., de la Sablonnière, R., & Provencher, P. (2007). Reciprocal relationships between contextual and situational motivation in a sport setting. *Psychology of Sport and Exercise, 8*, 854–873.
- Boiché, J. C. S., Sarrazin, P. G., Grouzet, F. M. E., Pelletier, L. G., & Chanal, J. P. (2008). Students' motivational profiles and achievement outcomes in physical education: A self-determination perspective. *Journal of Educational Psychology, 100*, 688–701.
- Bono, J. E., & Judge, T. A. (2003). Self-concordance at work: Toward understanding the motivational effects of transformational leaders. *Academy of Management Journal, 46*, 554–571.
- Burnett, M. F., Williamson, I. O., & Bartol, K. M. (2009). The moderating effect of personality on employees' reactions to procedural fairness and outcome favorability. *Journal of Business and Psychology, 24*, 469–484.
- Chan, D. K., Hagger, M. S., & Spray, C. M. (2011). Treatment motivation for rehabilitation after a sport injury: Application of the trans-contextual model. *Psychology of Sport and Exercise, 12*, 83–92.
- Chau, S. L., Dahling, J. J., Levy, P. E., & Diefendorff, J. M. (2009). A predictive study of emotional labor and turnover. *Journal of Organizational Behavior, 30*, 1151–1163.
- Cresswell, S. L., & Eklund, R. C. (2005). Changes in athlete burnout and motivation over a 12-week league tournament. *Medicine and Science in Sports and Exercise, 37*, 1957–1966.

- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology, 74*, 580–590.
- Deci, E. L., & Ryan, R. M. (1985a). The General Causality Orientations Scale: Self-determination in personality. *Journal of Research in Personality, 19*, 109–134.
- Deci, E. L., & Ryan, R. M. (1985b). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.
- Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology, 49*, 14–23.
- Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern Bloc country. *Personality and Social Psychology Bulletin, 27*, 930–942.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71–75.
- Dysvik, A., & Kuvaas, B. (2008). The relationship between perceived training opportunities, work motivation and employee motivation. *International Journal of Training and Development, 12*, 138–157.
- Dysvik, A., & Kuvaas, B. (2010). Exploring the relative and combined influence of mastery-approach goals and work intrinsic motivation on employee turnover intention. *Personnel Review, 39*, 622–638.
- Eder, P., & Eisenberger, R. (2008). Perceived organizational support: Reducing the negative influence of coworker withdrawal behavior. *Journal of Management, 34*, 55–68.
- Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology, 86*, 42–51.
- Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. D. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology, 82*, 812–820.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*, 500–507.
- Eisenberger, R., & Stinglhamber, F. (2011). *Perceived organizational support: Fostering enthusiastic and productive employees*. Washington, DC: American Psychological Association Books.
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology, 87*, 565–573.
- Fouquereau, E., & Rioux, L. (2002). Élaboration de l'Échelle de Satisfaction de Vie Professionnelle (ESVP) en langue française: Une démarche exploratoire. *Revue Canadienne des Sciences du Comportement, 34*, 210–215.
- Gagné, M., Chemolli, E., Forest, J., & Koestner, R. (2008). The temporal relations between work motivation and organizational commitment. *Psychologica Belgica, 48*, 219–241.
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*, 331–362.
- Gagné, M., Forest, J., Gilbert, M.-H., Aubé, C., Morin, E., & Malorni (2010). The Motivation at Work Scale: Validation evidence in two languages. *Educational and Psychological Measurement, 70*, 628–646.
- Gagné, M., Koestner, R., & Zuckerman, M. (2000). Facilitating acceptance of organizational change: The importance of self-determination. *Journal of Applied Social Psychology, 30*, 1843–1852.
- Gagné, M., Senécal, C., & Koestner, R. (1997). Proximal job characteristics, feelings of empowerment, and intrinsic motivation: A multidimensional model. *Journal of Applied Social Psychology, 27*, 1222–1240.
- Gillet, N., Berjot, S., & Gobancé, L. (2009). A motivational model of performance in the sport domain. *European Journal of Sport Science, 9*, 151–158.
- Gillet, N., Berjot, S., & Paty, E. (2010). Profils motivationnels et ajustement au travail: Vers une approche intra-individuelle de la motivation. *Le Travail Humain, 73*, 141–162.
- Gillet, N., Vallerand, R. J., Amoura, S., & Baldes, B. (2010). Influence of coaches' autonomy support on athletes' motivation and sport performance: A test of the hierarchical model of intrinsic and extrinsic motivation. *Psychology of Sport and Exercise, 11*, 155–161.
- Gillet, N., Vallerand, R. J., Paty, E., Gobancé, L., & Berjot, S. (2010). French validation and adaptation of the Perceived Autonomy Support Scale for Exercise Settings to the sport context. *International Journal of Sport and Exercise Psychology, 8*, 118–128.
- Grant, A., & Sonnentag, S. (2010). Doing good buffers against feeling bad: Prosocial impact compensates for negative task and self-evaluations. *Organizational Behavior and Human Decision Processes, 111*, 13–22.
- Guay, F., Blais, M. R., Vallerand, R. J., & Pelletier, L. G. (1999). *The Global Motivation Scale*. Unpublished manuscript, Université du Québec à Montréal, Canada.
- Guay, F., Mageau, G. A., & Vallerand, R. J. (2003). On the hierarchical structure of self-determined motivation: A test of top-down, bottom-up, reciprocal, and horizontal effects. *Personality and Social Psychology Bulletin, 29*, 992–1004.
- Gyekye, S. A., & Salminen, S. (2009). Perceived organizational support: An African perspective. *Journal of Applied Social Psychology, 39*, 2651–2668.
- Hagger, M. S., Chatzisarantis, N. L. D., Hein, V., Pihu, M., Soós, I., & Karsai, I. (2007). The Perceived Autonomy Support Scale for Exercise Settings (PASSES): Development, validity, and cross-cultural invariance in young people. *Psychology of Sport and Exercise, 8*, 632–653.
- Hardré, P. L., & Reeve, J. (2009). Benefits of training corporate managers to adopt a more autonomy-supportive motivating style toward employees. *International Journal of Training and Development, 13*, 165–184.
- Jöreskog, K., & Sörbom, D. (1996). *LISREL 8: User's reference guide*. Chicago, IL: Scientific Software.
- Kraimer, M. L., Seibert, S. E., Wayne, S. J., Liden, R. C., & Bravo, J. (2011). Antecedents and outcomes of organizational support for development: The critical role of career opportunities. *Journal of Applied Psychology, 96*, 485–500.
- Kuvaas, B. (2006). Performance appraisal satisfaction and employee outcomes: Mediating and moderating roles of motivation. *International Journal of Human Resource Management, 17*, 504–522.
- Kuvaas, B. (2009). A field test of hypotheses derived from self-determination theory among public sector employees. *Employee Relations, 31*, 39–56.
- Kuvaas, B., & Dysvik, A. (2010). Does best practice HRM only work for intrinsically motivated employees? *International Journal of Human Resource Management, 21*, 2339–2357.
- Lam, C. F., & Gurland, S. T. (2008). Self-determined work motivation predicts job outcomes, but what predicts self-determined work motivation? *Journal of Research in Personality, 42*, 1109–1115.
- Lavergne, K. J., Sharp, E. C., Pelletier, L. G., & Holtby, A. (2010). The role of perceived government style in the facilitation of self-determined and non self-determined motivation for pro-environmental behavior. *Journal of Environmental Psychology, 30*, 169–177.

- Lavigne, G., & Vallerand, R. J. (2010). The dynamic processes of influence between contextual and situational motivation: A test of the hierarchical model in a science education setting. *Journal of Applied Social Psychology, 40*, 2343–2359.
- Lavigne, G., Vallerand, R. J., & Miquelon, P. (2007). A motivational model of persistence in education. *European Journal of Psychology of Education, 22*, 351–369.
- Levesque, C. S., & Pelletier, L. G. (2003). On the investigation of primed and chronic autonomous and heteronomous motivational orientations. *Personality and Social Psychology Bulletin, 29*, 1570–1584.
- Lonsdale, C., Hodge, K., & Rose, E. (2009). Athlete burnout in elite sport: A self-determination perspective. *Journal of Sports Sciences, 27*, 785–795.
- Michael, J. H., Evans, D. D., Jasen, K. L., & Haight, J. M. (2005). Management commitment to safety as organizational support: Relationship with non-safety outcomes in the wood manufacturing employees. *Journal of Safety Research, 36*, 171–179.
- Muraven, M., Gagné, M., & Rosman, H. (2008). Helpful self-control: Autonomy support, vitality, and depletion. *Journal of Experimental Social Psychology, 44*, 573–585.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York, NY: McGraw-Hill.
- Panaccio, A., & Vandenberghe, C. (2009). Perceived organizational support, organizational commitment and psychological well-being: A longitudinal study. *Journal of Vocational Behavior, 75*, 224–236.
- Pazy, A., Ganzach, Y., & Davidov, Y. (2006). Decision making training for occupational choice and early turnover: A field experiment. *Career Development International, 11*, 80–91.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., & Brière, N. M. (2001). Associations among perceived autonomy support, forms of self-regulation, and persistence: A prospective study. *Motivation and Emotion, 25*, 279–306.
- Ratelle, C. F., Vallerand, R. J., Chantal, Y., & Provencher, P. J. (2004). Cognitive adaptation and mental health: A motivational analysis. *European Journal of Social Psychology, 34*, 459–476.
- Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology, 98*, 209–218.
- Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28*, 147–169.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology, 87*, 698–714.
- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of Applied Psychology, 86*, 825–836.
- Richer, S. F., Blanchard, C., & Vallerand, R. J. (2002). A motivational model of work turnover. *Journal of Applied Social Psychology, 32*, 2089–2113.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*, 54–67.
- Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: University of Rochester Press.
- Salinas-Jiménez, M. d. M., Artés, J., & Salinas-Jiménez, J. (2010). Income, motivation, and satisfaction with life: An empirical analysis. *Journal of Happiness Studies, 11*, 779–793.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). Washington, DC: American Sociological Association.
- Tremblay, M., Cloutier, J., Simard, G., Chênevert, D., & Vandenberghe, C. (2010). The role of HRM practices, procedural justice, organizational support and trust in organizational commitment and in-role and extra-role performance. *International Journal of Human Resource Management, 21*, 405–433.
- Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271–360). New York, NY: Academic Press.
- 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.), *Self-determination theory in exercise and sport* (pp. 255–279). Champaign, IL: Human Kinetics.
- Vallerand, R. J., Carbonneau, N., & Lafrenière, M.-A. K. (2009). La théorie de l'autodétermination et le modèle hiérarchique de la motivation intrinsèque et extrinsèque: Perspectives intégratives [Self-determination theory and the hierarchical model of intrinsic and extrinsic motivation: Integrative perspectives]. In P. Carré & F. Fenouillet (Eds.), *Traité de la psychologie de la motivation* (pp. 47–66). Paris, France: Dunod.
- Wayne, S. J., Shore, L. M., & Liden, R. C. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management Journal, 40*, 82–111.
- Williams, G. C., Grow, V. M., Freedman, Z. R., Ryan, R. M., & Deci, E. L. (1996). Motivational predictors of weight loss and weight-loss maintenance. *Journal of Personality and Social Psychology, 70*, 115–126.
- Zhou, M., Ma, W. J., & Deci, E. L. (2009). The importance of autonomy for rural Chinese children's motivation for learning. *Learning and Individual Differences, 19*, 492–498.

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