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The authors examined the relationships between soldiers' motivational profiles and work correlates. Results showed that the profiles differentially related to perceived organizational support and work engagement in both samples, as well as to communication, supervisor support, and positive and negative affect in Sample 2. Specifically, soldiers with the highest autonomous motivation scores displayed the highest levels of perceived organizational support and work engagement. Moreover, the highest levels of autonomous motivation were associated with the highest levels of communication, supervisor support, and positive affect. Finally, soldiers with low to moderate levels of autonomous motivation reported higher levels of negative affect than those characterized by high autonomous motivation scores. Theoretical and practical implications of the findings are discussed.

What is the public significance of this article?
Soldiers with the highest autonomous motivation scores (i.e., those who engage in their professional activities out of pleasure and/or volition and choice) display the highest levels of well-being. These soldiers also perceive the highest levels of organizational support, supervisor support, and communication.

Keywords: self-determination theory, autonomous and controlled motivation, work engagement, perceived organizational support, job resources

Self-determination theory (SDT; Deci & Ryan, 2000) is a motivation theory that has recently generated numerous studies in the

work setting (e.g., Chambel, Castanheira, Oliveira-Cruz, & Lopes, 2015; Gagné et al., 2015). Most of these studies examined the links between motivation and attitudes/ behaviors using a variable-centered approach. Traditional variable-centered analyses are designed to test how specific variables relate to other variables, on average, in a specific sample of workers (e.g., assessing the relationship of autonomous motivation to work engagement). This common-use strategy shows some limitations as a variety of motives (e.g., money, pleasure) are typically at play in life settings and different motivational profiles may thus exist in the work context (Vallerand, 1997), which variable-centered approach does

not allow to reflect. In other words, this approach does not take into account the fact that individuals may simultaneously endorse multiple reasons for acting in the work context. Moreover, studies using variable-centered methods generally do not examine how the different forms of motivation interact in predicting work behaviors. Indeed, when researchers use regression analyses and want to simultaneously consider more than three interacting variables, it is almost impossible to interpret the interactions between the different forms of behavioral regulation.

In contrast, through their focus on the identification of subgroups of participants characterized by distinct configuration on a set of interacting variables, person-centered analyses are naturally suited to this form of investigation (e.g., Gillet, Fouquereau, Vallerand, Abraham, & Colombat, in press). In other words, the person-centered approach involves the identification of homogeneous subgroups of workers sharing similar configurations of behavioral regulations (i.e., hereafter referred to as *motivational profiles*). With person-centered analyses, it is thus possible to examine how the different types of motivation combine into several motivational profiles and answer these interesting questions. Does a mixed profile (i.e., high levels on all forms of motivation) relate to the highest levels of work engagement? Do the different types of behavioral regulation act synergistically to explain all job behaviors? More generally, the person-centered approach provides a complementary—yet uniquely informative—perspective on the same research questions, focusing on individual profiles rather than on specific relations among variables (Marsh, Lüdtke, Trautwein, & Morin, 2009).

However, as reviewed below, only four recent investigations in the work context (i.e., Gillet, Berjot, & Paty, 2010; Graves, Cullen, Lester, Ruderman, & Gentry, 2015; Moran, Diefendorff, Kim, & Liu, 2012; Van den Broeck, Lens, De Witte, & Van Coillie, 2013) examined the links between motivational profiles and dimensions such as work engagement, perceived stress, and burnout. Although these studies generated new insights into the nature and implications of work motivation, they led to divergent conclusions regarding the importance of autonomous and controlled motivation. For instance, contrary to theoretical predictions (Deci & Ryan, 2000), a motivational profile with high levels of both autonomous and controlled motivation and a motivational profile with high levels of autonomous motivation and low levels of controlled motivation did not differ from one another on job satisfaction and work engagement (Van den Broeck et al., 2013).

In the present research, we used a person-centered approach to examine the simultaneous occurrence of different forms of motivation within workers and contribute to the extant literature. Specifically, we first considered four forms of motivation proposed by SDT and did not only focus on global scores of autonomous and controlled motivation as in Van den Broeck et al. (2013). Second, we assessed work motivation in two samples of French soldiers to identify the motivational profiles in an understudied population and then examine the links between these motivational profiles and relevant work outcomes (i.e., work engagement, positive and negative affect). To the best of our knowledge, only one recent study (Chambel et al., 2015), using a variable-centered approach, examined the organizational, managerial, and affective factors associated with the different forms of behavioral regulation proposed by SDT in a military context. In addition, past research showed that soldiers' motivation significantly relates to their work engagement (e.g., Castanheira, Chambel, Lopes, & Oliveira-Cruz, 2016) and, more generally, that work engagement should be promoted in the military setting (e.g., Bakker, van Emmerik, & Euwema, 2006; Britt, Adler, & Bartone, 2001; Britt & Bliese, 2003; Chambel, & Oliveira-Cruz, 2010). For instance, Ivey, Blanc, and Mantler (2015) found that work engagement was positively associated with willingness to deploy on operations, and negatively linked to turnover intentions and psychological distress in a sample of Canadian Armed Forces. Third, because the cluster method has been heavily criticized and largely supplanted by the latent profile analysis (LPA) method (e.g., Morin, Morizot, Boudrias, & Madore, 2011), we used LPA to provide a more accurate representation of the soldiers' motivational profiles. Finally, because little research identified the organizational factors associated with adaptive motivational profiles, we examined the links between job resources and

motivational profiles. This could be helpful in guiding applications and planning interventions to promote soldiers' work engagement and mental health.

SDT

SDT offers a multidimensional view on motivation (see Deci & Ryan, 2000). First, *intrinsic motivation* involves engaging freely in an activity for its inherent satisfaction, that is, because it is interesting and enjoyable in itself. Second, *identified regulation* reflects behaviors that are self-initiated even if they are not perceived as interesting. Third, *introjected regulation* refers to the regulation of behavior based on internally pressuring forces, such as avoidance of guilt and shame, and the pursuit of self-worth. Fourth, and finally, exte*rnal regulation* refers to actions controlled by external contingencies (e.g., rewards, punishments). These distinct types of regulations are also categorized into two broader forms of motivation: intrinsic motivation and identified regulation are referred to as *autonomous forms of motivation*, whereas introjected and external regulations are described as *controlled forms of motivation*. Past research has generally shown that autonomous motivation (i.e., engaging in an activity out of pleasure and/or volition and choice) was associated with more positive attitudes/behaviors (e.g., job satisfaction, performance) than controlled motivation (i.e., engaging in an activity for internal or external pressures; see Gagné & Deci, 2005).

Motivational Profiles

In contrast to the variable-centered approach that aims to examine links among variables, the person-centered approach is specifically designed to identify homogeneous subgroups of individuals with differing work motivation profiles, and to test propositions involving profile comparisons. The benefits of the person-centered analyses are that this approach provides a more holistic representation of workers as whole persons, by focusing on a system of dimensions taken in combination rather than in isolation. Moreover, it is more suitable to the detection of complex interactions among multiple variables (Morin et al., 2011), as it is the

case when we consider the different forms of motivation proposed by SDT.

Van den Broeck et al. (2013) identified four motivational profiles and showed that the two motivational profiles with high autonomous motivation scores were associated with higher levels of job satisfaction and work enthusiasm/engagement, and lower levels of strain/burnout than the other two profiles with low autonomous motivation scores. Yet, Gillet, Berjot, Vallerand, Amoura, and Rosnet (2012) showed that it was important to distinguish between introjected and external regulations as the motivational profile leading to the highest levels of performance was characterized by high levels of introjected regulation but moderate levels of external regulation (see also Graves et al., 2015). In addition, Gagné et al. (2015) showed that external regulation significantly and positively related to turnover intention, whereas introjected regulation was not significantly associated with this behavioral intention. Finally, using a global score of controlled motivation may not be appropriate as introjected regulation sometimes correlates weakly or not significantly with external regulation (e.g., Moran et al., 2012).

Moran et al. (2012) also showed that employees with high scores on all types of motivation obtained the highest levels of performance. Prior studies also found similar results in the work (Gillet et al., 2010) and sport (Gillet et al., 2012) contexts. These findings are not fully in line with SDT and suggest that autonomous motivation, introjected regulation, and external regulation may serve a synergistic function to predict work behaviors. More generally, the four studies to date investigating workers' motivational profiles based on the different forms of motivation proposed by SDT yielded to mixed conclusions, which might be due to methodological and contextual differences. Indeed, the questionnaire used to assess work motivation was different in each investigation. Moreover, Graves et al. (2015) used LPA to identify the motivational profiles in a sample of U.S. managers. Gillet et al. (2010) and Moran et al. (2012) used cluster analyses in samples of French and Chinese workers, respectively, whereas Van den Broeck et al. (2013) used these analyses in three samples of Belgian employees.

The Present Research

Although the person-centered approach is gaining popularity among motivation researchers, additional research is necessary to understand the interplay among the different forms of work motivation (Gillet et al., 2010), especially in understudied populations such as soldiers. These investigations may generate new insights into the nature and implications of work motivation and contribute to recent developments in SDT. The first purpose of the present research was thus to identify soldiers' motivational profiles in two samples of French soldiers. Indeed, given that no research has explored soldiers' motivational profiles using a person-centered approach, it is crucial to understand whether these profiles replicate in the military context. As such, in our second sample of career soldiers, we sought to replicate the motivational profiles identified in our first sample of contract soldiers. Contract soldiers have an employment contract with the Ministry of Defense for a maximum of 10 years (but the contract can be renewed), whereas career soldiers have an indefinite contract. Thus, contract soldiers are generally younger and have lower tenure in the French Air Force than career soldiers. In addition, contrary to contract soldiers, career soldiers cannot hold the rank of private. However, we would not expect different profiles to be relevant for contract versus career soldiers. In other words, we attempted to increase the generalizability of the motivational profiles to the military setting by sampling both contract (Sample 1) and career (Sample 2) soldiers.

Chambel et al. (2015) found that Portuguese soldiers were characterized by moderate to high levels of both work autonomous and controlled motivation. In line with the aforementioned results, we expected the presence of a first motivational profile characterized by moderate scores on both autonomous and controlled motivation (i.e., a moderate profile). However, we must also acknowledge that soldiers may be characterized by other motivational profiles. Indeed, previous studies in the work domain (e.g., Moran et al., 2012; Van den Broeck et al., 2013) consistently found at least three other motivational profiles. In line with these findings, we hypothesized that these additional motivational profiles may also be identified.

Hypothesis 1: Soldiers are characterized by four motivational profiles, namely (a) moderate scores on autonomous motivation, introjected regulation, and external regulation (i.e., a moderate profile); (b) high scores on autonomous motivation, and low scores on introjected and external regulations (i.e., a self-determined profile); (c) high scores on autonomous motivation and introjected regulation, and moderate scores on external regulation (i.e., a mixed profile); and (d) low scores on all forms of motivation (i.e., a low profile).

Then, in line with previous studies (e.g., Van den Broeck et al., 2013), our second purpose was to examine the links between these profiles and work engagement. "Work engagement is defined as a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Bakker, & Salanova, 2006, p. 702). The importance of this dimension stems from studies indicating that work engagement predicts numerous soldiers' attitudes and behaviors including turnover intentions (Alarcon, Lyons, & Tartaglia, 2010) and fatigue symptoms (Boermans, Kamphuis, Delahaij, van den Berg, & Euwema, 2014). Given that the effects of motivational profiles may differ as a function of the variables under study (Van den Broeck et al., 2013), in Sample 2, we also considered two additional dimensions that were not studied in previous investigations of workers' motivational profiles, namely positive and negative affect in the workplace. More generally, it is important to examine the factors associated with individuals' psychological well- and ill-being in the military context as soldiers' mental health relates to their organizational commitment (Meyer, Kam, Goldenberg, & Bremner, 2013) and turnover intentions (Stetz, Castro, & Bliese, 2007).

Because they work out of volition and because their job contributes to their own goals and interests, soldiers who display high levels of autonomous motivation are more likely to feel more vigorous, dedicated, and enthusiastic at work than their less autonomously motivated counterparts (e.g., van Beek, Taris, & Schaufeli, 2011). Indeed, when autonomously motivated, employees perceive their work as congruent with their own values and interests, thereby allowing them to fully partake in the activity

(Deci & Ryan, 2000). The only study examining the links between motivational profiles and work engagement (Van den Broeck et al., 2013) also showed that the two motivational profiles with high levels of autonomous motivation did not differ on this dimension, whereas the controlled motivation scores were significantly different in these two profiles (i.e., high levels of controlled motivation in one profile and low levels in the other one). Based on these results, Van den Broeck et al. (2013, p. 76) stated that "a prudent conclusion could be that controlled motivation does not add to well-being in addition to high autonomous motivation." In other words, it appears that controlled motivation is not so bad when it is not the sole driver of workers' motivation but is accompanied by high level of autonomous motivation. Although autonomous motivation is clearly the most adaptive aspect of workers' motivation (Gagné & Deci, 2005), it may sometimes be necessary for employees to self-generate motivation in general to maintain or improve their autonomous motivation when facing particularly challenging professional situations or when energy levels start to drop. We thus proposed the following hypothesis:

> *Hypothesis 2:* The different profiles can be ordered from high to low levels of work engagement and positive affect as follows: (a) the self-determined and mixed profiles, (b) the moderate profile, and (c) the low profile.

In contrast, autonomous motivation and controlled motivation are negatively and positively associated with negative affect, respectively (e.g., Gillet, Vallerand, Lafrenière, & Bureau, 2013). High levels of introjected regulation and moderate levels of external regulation should also lead to higher levels of negative affect than a combination of low levels of introjected and external regulations (Deci & Ryan, 2000). Indeed, when controlled motivation is high, the motivational state is not aligned with one's values and interests thereby preventing one from fully focusing on the activity. In other words, when workers are controlled, they experience pressure to think, feel, or behave in particular ways and should experience negative outcomes. In addition, if the levels of autonomous motivation are too low, workers are not protected

from ill-being and maladaptive functioning (Gillet et al., in press). Thus, we formulated the following hypothesis:

> *Hypothesis 3:* The different profiles can be ordered from high to low levels of negative affect as follows: (a) the low and moderate profiles, (b) the mixed profile, and (c) the self-determined profile.

Finally, only two studies in the work domain investigated the relationships between work factors and motivational profiles (i.e., Graves et al., 2015; Moran et al., 2012). We looked into three organizational factors to extend the limited amount of work on this topic. Specifically, we conjointly considered perceived organizational support in both Samples 1 and 2, whereas two additional job resources were assessed in Sample 2 (i.e., supervisor support and communication). Although few investigations examined the effects of perceived organizational support and other job resources in samples of soldiers (e.g., Tucker et al., 2009), especially in France, perceived organizational support, supervisor support, and communication may play a particularly important role in explaining soldiers' work motivation, engagement, and affect (e.g., Chambel et al., 2015; Lequeurre, Gillet, Ragot, & Fouquereau, 2013).

Organizational support is associated with employees' internalization of organizational values, and when they perceive high levels or organizational support, workers tend to see their work as more meaningful and self-expressive. Thus, organizational support allows employees to experience work behaviors as self-concordant, thereby increasing autonomous motivation (Gillet, Gagné, Sauvagère, & Fouquereau, 2013). Prior research also showed that job resources, such as emotional support and quality of relationships with staff, were positively associated with work autonomous motivation and optimal functioning (e.g., Lequeurre et al., 2013). When employees are satisfied with the quality of communication and experience more support from their supervisor, they sense that their needs for autonomy, competence, and relatedness are fulfilled, and their autonomous motivation is higher (e.g., Gillet, Gagné, et al., 2013). In line with these findings, we proposed the following hypothesis:

> *Hypothesis 4:* Soldiers with the self-determined and mixed profiles perceive the

highest levels of perceived organizational support, supervisor support, and communication.

Method

Participants and Procedure

A first sample of 567 contract soldiers (372 men and 195 women) from the French Air Force participated in the present study. Participants' were between 20 and 47 years old ($M = 31.14$ years; $SD = 5.69$ years). Tenure in the French Air Force ranged from 1 to 28 years ($M = 10.37$ years; $SD = 5.30$ years). Two hundred twenty-three soldiers hold the rank of private (39.3%), 251 were noncommissioned officers (44.3%), and 93 were officers (16.4%). A second sample of 839 career soldiers (727 men and 112 women) from the French Air Force also participated in the present study. Participants' were between 20 and 62 years old ($M = 40.16$ years; $SD = 7.16$ years). Tenure in the French Air Force ranged from 1.50 to 42 years ($M = 20.20$ years; $SD = 7.64$ years). Six hundred eighty-six soldiers were noncommissioned officers (81.8%) and 153 were officers (18.2%).

The present research was conducted in the French Air Force. First, soldiers were informed of the study via the intranet network of the French Air Force. Then, for both samples, eligible French Air Force soldiers (i.e., career and contract soldiers) were sent an e-mail inviting them to complete a questionnaire on their work motivation via an online survey. Each soldier received a cover letter explaining the study's purposes, a consent form stressing that participation was voluntary, and a link to a website hosting the survey.

Measures

All variables were measured on a 7-point scale with the exception of the affect scale, which was assessed using a 5-point scale.

Work motivation. Work motivation was assessed with the French version of the Multidimensional Work Motivation Scale (Gagné et al., 2015): three items for intrinsic motivation, three items for identified regulation, four items for introjected regulation, and six items for external regulation. The factorial structure of this

scale was assessed using confirmatory factor analyses. To assess their goodness-of-fit, various fit indices were used: the normed fit index (NFI), the incremental fit index (IFI), the Tucker-Lewis index (TLI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Values greater than .90 for the NFI, IFI, TLI, and CFI, and values below .08 for the RMSEA indicate a reasonable fit (Byrne, 2001). Results revealed a good fit of the model to the data in both samples, $\chi^2(77) = 274.49$, $p < .001$, NFI = .94, IFI = .95, TLI = .93, CFI = .95, RMSEA = .07, Akaike's information criterion (AIC) = 382.49 (Sample 1); and $\chi^2(77) = 498.64$, $p < .001$, NFI = .93, IFI = .94, TLI = .90, CFI = .94, RMSEA = .08, AIC = 616.64 (Sample 2). In with prior studies (e.g., Gagné et al., 2015), an alternative model was also tested within each sample. The alternative model replicates the four-factor model but adds second-order factors for autonomous and controlled motivation. This alternative model provided a worse fit than the first model: $\chi^2(78) = 296.20$, $p < .001$, NFI = .93, IFI = .95, TLI = .92, CFI = .95, RMSEA = .07, AIC = 412.20 (Sample 1); and $\chi^2(78) = 521.40$, $p < .001$, NFI = .92, IFI = .94, TLI = .90, CFI = .93, RMSEA = .08, AIC = 637.40 (Sample 2). There are several advantages to using the AIC rather than relying on deviance statistics and chi-square difference tests to evaluate the goodness of fit (see Lott & Antony, 2012). Because its AIC statistic was lower (Kline, 2005), the first model was preferred over the alternative model. Cronbach's alpha ranged from .69 to .90 in Sample 1 and from .71 and .93 in Sample 2.

Work engagement. Work engagement was assessed using the nine-item Utrecht Work Engagement Scale (Schaufeli et al., 2006): thre items for vigor ($\alpha = .87$ in both samples), three items for dedication ($\alpha = .93$ in Sample 1 and $\alpha = .91$ in Sample 2), and three items for absorption ($\alpha = .87$ in Sample 1 and $\alpha = .85$ in Sample 2).

Positive and negative affect. We used five items for positive affect ($\alpha = .84$ in Sample 2) and five items for negative affect ($\alpha = .80$ in Sample 2) from the French-Canadian version of the Positive and Negative Affect Schedule (PANAS; Gaudreau, Sanchez, & Blondin, 2006). Participants were asked to indicate to what extent they generally feel each of the 10 affects at work.

Perceived organizational support. Perceived organizational support (α = .90 in Sample 1 and α = .88 in Sample 2) was assessed with the eight-item version of the Perceived Organizational Support Scale (Eisenberger, Huntington, Hutchison, & Sowa, 1986).

Job resources. Communication (four items, α = .84 in Sample 2) and supervisor support (four items, α = .88 in Sample 2) were measured using the Questionnaire sur les Ressources et les Contraintes Professionnelles (Lequeurre et al., 2013).

Data Analysis

We first examined the dimensionality of our variables using confirmatory factor analyses in conjunction with full information maximum likelihood estimation to deal with the very low level of missing data present in this data set. Then, LPA was used, using MPlus 6.12 software (Muthén & Muthén, 1998–2007), to identify groups of participants with similar motivational profiles. The LPA method was shown to lead to more robust results than cluster methods. Specifically, cluster methods do not provide clear guidelines to select the optimal number of profiles in the sample, rely on rigid assumptions, and strictly categorize people into a single profile. LPA in contrast calculates the probability that each worker belongs to each profile. In addition, LPA provides indices that help choose the optimal number of profiles (see Vermunt & Magidson, 2002). Consistent with previous recommendations (e.g., Nylund, Asparouhov, & Muthén, 2007), each model was evaluated using the following indices: Log Likelihood (LL), AIC, Bayesian information criterion (BIC), sample-size-adjusted BIC (SSA-BIC), bootstrapped likelihood ratio test (BLRT), and Lo-Mendell-Rubin likelihood ratio test (LMR). LL, AIC, BIC, SSA–BIC should be lower in comparison to other profile solutions. Significant p values ($p < .05$) for both the LMR and BLRT indicate that the k-1–class model should be rejected in favor of a k-class model. Researchers should also consider the theoretical meaning of solutions when determining the optimal number of profiles (Hypothesis 1). We also used the AUXILIARY (e) function to test the equality of three variable means (i.e., work engagement, positive and negative affect) across the various profiles (Hypotheses 2 and 3) based on a Wald chi-square test of statistical significance (see Morin et al., 2011). Finally, perceived organizational support in both samples, together with job resources in Sample 2, were incorporated directly into the model to predict class membership through a multinomial logistic regression (Hypothesis 4).

Results

Preliminary Analyses

In Sample 1, the tested model was composed of intrinsic motivation, identified regulation, introjected regulation, external regulation, vigor, dedication, absorption, and perceived organizational support as separate latent variables. In Sample 2, the tested model was composed of the same variables as well as positive affect, negative affect, communication, and supervisor support. These models yielded a good fit to the data, $\chi^2(437) = 1,016.75$, $p < .001$, $\chi^2/df = 2.33$, NFI = .93, IFI = .96, TLI = .95, CFI = .96, RMSEA = .05 (Sample 1); and $\chi^2(1,116) = 2863.11$, $p < .001$, $\chi^2/df = 2.57$, NFI = .91, IFI = .94, TLI = .93, CFI = .94, RMSEA = .04 (Sample 2). These results provided clear support for the construct validity of our measures and a solid starting point for our subsequent analyses. The issue of common method variance was also addressed in both samples using Podsakoff, MacKenzie, Lee, and Podsakoff's (2003) recommendations. We first examined a single-factor model for the present data (i.e., Harman's single-factor test). This test revealed a poor fit to the data in both samples (e.g., NFI = .72 in Sample 1 and CFI = .62 in Sample 2). Second, we added an orthogonal latent common method factor to the theoretical model. The fit of this model was good in both samples: $\chi^2(404) = 709.36$, $p < .001$, $\chi^2/df = 1.76$, NFI = .95, IFI = .98, TLI = .97, CFI = .98, RMSEA = .04 (Sample 1); and $\chi^2(1065) = 2217.34$, $p < .001$, $\chi^2/df = 2.08$, NFI = .93, IFI = .96, TLI = .95, CFI = .96, RMSEA = .04 (Sample 2). However, the method factor accounted for only 25% (Sample 1) and 16% (Sample 2) of the total variance. Overall, these results suggest that common method bias was not a problem underlying the present data. Correlations and descriptive statistics for the study variables are presented in Table 1.

Table 1
Correlations for the Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Intrinsic motivation	—	.73***	.29***	.04	.70***	.83***	.62***	.39***	.64***	−.19***	.26***	.32***
2. Identified regulation	.72***	—	.57***	.27***	.58***	.67***	.55***	.24***	.56***	−.06	.26***	.24***
3. Introjected regulation	.25***	.52***	—	.49***	.21***	.24***	.26***	.02	.23***	.16***	−.01	.00
4. External regulation	.04	.32***	.59***	—	−.01	−.02	−.02	−.04	−.03	.10**	−.02	.00
5. Vigor	.73***	.64***	.29***	.11*	—	.82***	.74***	.38***	.75***	−.23***	.30***	.36***
6. Dedication	.86***	.67***	.21***	.06	.82***	—	.75***	.34***	.72***	−.18***	.29***	.31***
7. Absorption	.73***	.60***	.25***	.05	.79***	.83***	—	.29***	.67***	−.04	.25***	.28***
8. Perceived organizational support	.41***	.30***	.07	−.03	.40***	.37***	.34***	—	.32***	−.42***	.29***	.64***
9. Positive affect									—	−.12***	.23***	.30***
10. Negative affect										—	−.23***	−.35***
11. Communication											—	.33***
12. Supervisor support												—

Note. Correlations obtained in Sample 1 are indicated below the diagonal and those obtained in Sample 2 show above the diagonal.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Main Analyses

As mentioned above, to determine the optimal number of profiles in the data, multiple sources of information need to be considered, including the examination of the substantive meaningfulness, theoretical conformity, and statistical adequacy of the solutions (Marsh et al., 2009). Statistical indices are available to support this decision. In both samples, most indices suggest the superiority of the four-, five- and six-profile solutions in comparison to the two- and three-profile solutions, with lower LL, AIC, BIC, and SSA-BIC values (see Table 2). In line with the Morin et al.'s (2011) recommendations, the correlates of motivational profiles were then considered to help in the final model selection (i.e., between the four-, five-, and six-profile solutions). These analyses indicated significant profile differences on perceived organizational support and work engagement for the four-class solution. In contrast, there were no significant differences between several profiles on work engagement for the five- and six-class solutions. Moreover, the examination of these various solutions revealed that moving from a four- to five-profile solution, and from a five- to six-profile solution did not result in the addition of a well-defined qualitatively distinct and theoretically meaningful profile to the solution. For instance, moving from the five- to the six-profile solution simply resulted in the arbitrary division of one of the existing profile into two profiles differing only quantitatively from one another. More generally, contrary to the five- and six-class solutions, the motivational profiles were readily interpretable for the four-class solution and referred to profiles already identified in prior research (e.g., Graves et al., 2015). Based on these results, we retained the four-profile structure in both samples (see Figures 1 and 2).

In line with prior studies (e.g., Gillet et al., in press), a mean score above 4.5 was classified as high, a mean score below 4.5 but above 3 was classified as moderate, and a mean score below 3 was classified as low. The four profiles were examined and classified accordingly. The first latent profile (19.6% of the first sample and 21.7% of the second sample) was labeled the low profile: low levels of autonomous motivation, introjected regulation, and external regulation. The second latent profile (18.5% of the

Table 2
Model Fit Statistics

Number of profiles	LL	AIC	BIC	SSA–BIC	BLRT (p)	LMR (p)
Sample 1						
2	−3,870.50	7,321.47	7,377.89	7,336.62	.0000	.0000
3	−3,647.73	7,156.11	7,234.23	7,177.09	.0000	.0150
4	−3,560.05	7,052.39	7,152.21	7,079.20	.0000	.3079
5	−3,503.19	6,935.46	7,056.99	6,968.11	.0000	.0026
6	−3,439.73	6,890.56	7,033.79	6,929.03	.0000	.2287
Sample 2						
2	−5,614.45	10,516.59	10,578.11	10,536.82	.0000	.0000
3	−5,245.29	10,269.74	10,354.92	10,297.76	.0000	.0004
4	−5,116.87	10,078.89	10,187.73	10,114.69	.0000	.0016
5	−5,016.45	9,967.54	10,100.04	10,011.13	.0001	.0001
6	−4,955.77	9,870.51	10,026.68	9,921.88	.0011	.0013

Note. LL = log-likelihood; AIC = Akaike information criteria; BIC = Bayesian information criteria; SSA–BIC = sample-size-adjusted BIC; BLRT = bootstrapped likelihood ratio test; LMR = Lo-Mendell-Rubin likelihood test.

first sample and 21.1% of the second sample) was labeled the moderate profile: low to moderate scores on autonomous motivation, introjected regulation, and external regulation. The third latent profile (42.3% of the first sample and 29.0% of the second sample) was labeled the self-determined profile: moderate to high levels of autonomous motivation and low levels of introjected and external regulations. Finally,

the fourth latent profile (19.6% of the first sample and 28.2% of the sample) was labeled the mixed profile: high levels of autonomous motivation and introjected regulation, and low to moderate levels of external regulation. More generally, these results provided support for Hypothesis 1.

In both samples, soldiers with the mixed profile displayed the highest scores on vigor, ded-
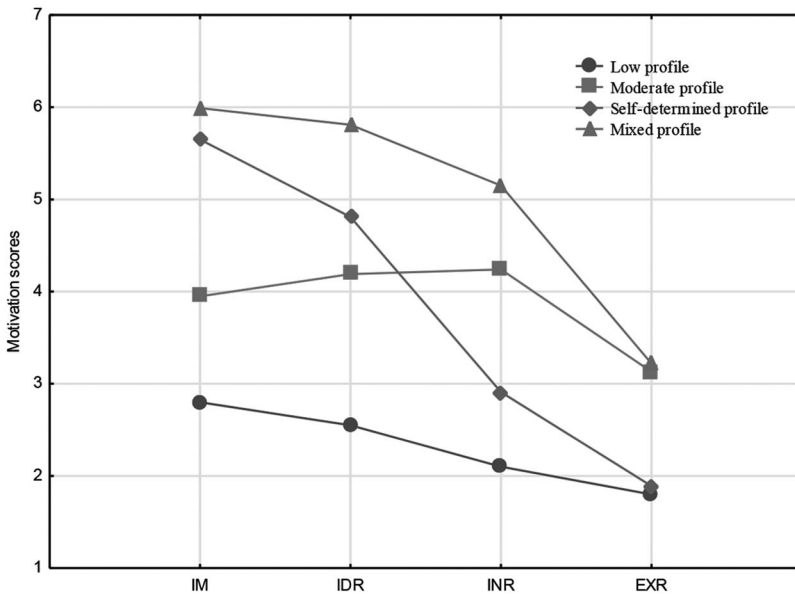

Figure 1. Motivational profiles identified in Sample 1. IM = intrinsic motivation; IDR = identified regulation; INR = introjected regulation; EXR = external regulation.
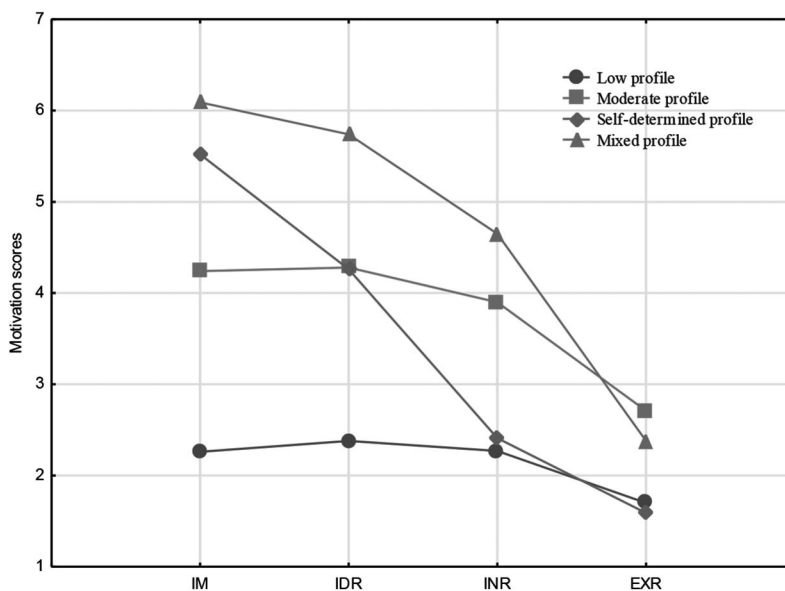
Figure 2. Motivational profiles identified in Sample 2. IM = intrinsic motivation; IDR = identified regulation; INR = introjected regulation; EXR = external regulation.

ication, and absorption, followed by those with the self-determined, moderate, and low profiles (see Table 3). In Sample 2, soldiers with the mixed profile displayed the highest scores on positive affect, followed by those with the self-determined, moderate, and low profiles, providing partial support for Hypothesis 2 as we expected that soldiers characterized by the self-determined and mixed profiles would not differ from one another on work engagement and positive affect. In addition, soldiers with the low and moderate profiles had the highest scores on

negative affect, followed by those with the mixed profile, and finally those with the self-determined profile. These results provided support for Hypothesis 3.

The relationships between perceived organizational support and the four latent profiles in Sample 1, taking the mixed profile as referent, were also examined. Results showed that perceived organizational support were associated with a lower probability of belonging to the low ($b = -1.01$, $p < .001$) and moderate ($b = -.90$, $p < .001$) profiles. However, the relation-

Table 3
Results from the Wald Chi-Square (χ^2) Tests of Mean Equality of the Auxiliary Analyses

Variables	Global χ^2	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4	Summary
Sample 1								
Vigor	111.058***	27.963***	146.330***	196.358***	37.420***	78.220***	19.130***	1 < 2 < 3 < 4
Dedication	181.968***	24.949***	232.615***	250.531***	95.570***	120.045***	8.534**	1 < 2 < 3 < 4
Absorption	100.389***	15.823***	112.985***	149.179***	57.952***	90.846***	12.523***	1 < 2 < 3 < 4
Sample 2								
Vigor	238.939***	44.608***	171.730***	354.363***	45.539***	193.338***	55.908***	1 < 2 < 3 < 4
Dedication	429.947***	103.640***	369.758***	647.969***	84.269***	277.535***	63.870***	1 < 2 < 3 < 4
Absorption	167.724***	29.822***	105.270***	257.114***	26.271***	149.376***	56.839***	1 < 2 < 3 < 4
Positive affect	203.300***	47.639***	150.770***	297.600***	28.633***	126.271***	44.653***	1 < 2 < 3 < 4
Negative affect	28.117***	.304	20.939***	6.603*	27.504***	10.119**	5.186*	1 = 2 > 4 > 3

Note. Profile 1 = low profile; Profile 2 = moderate profile; Profile 3 = self-determined profile; Profile 4 = mixed profile.
* $p < .05$. ** $p < .01$. *** $p < .001$.

ship between perceived organizational support and the self-determined profile was not significant ($b = -.05$, $p = .84$), suggesting that this latent profile and the mixed profile did not differ on perceived organizational support. In Sample 2, perceived organizational support, communication, and supervisor support were associated with a lower probability of belonging to the low (respectively, $b = -.64$, $p < .001$; $b = -.45$, $p < .01$; and $b = -.26$, $p = .05$) and moderate (respectively, $b = -.38$, $p = .05$; $b = -.32$, $p < .05$; and $b = -.28$, $p = .08$) profiles, taking the mixed profile as referent. However, the relationships between perceived organizational support, communication, supervisor support on one hand, and the self-determined profile on the other hand were not significant (respectively, $b = .18$, $p = .36$; $b = .04$, $p = .80$; and $b = -.18$, $p = .18$). Taken together, these results provided support for Hypothesis 4.

Discussion

The first purpose of the present research was to examine soldiers' motivational profiles. Results with two different samples revealed the presence of four similar motivational profiles (Hypothesis 1). Specifically, soldiers with a low profile consider that putting efforts in their job has no personal significance to them (e.g., low sense of patriotism), they do not think they have to prove themselves that they can perform well, and they do not try to get others' approval (e.g., supervisor, colleagues, family). Soldiers with a moderate profile think that the work they do is quite interesting, and if they do not put enough effort in it, they can feel ashamed or fear that they may lose their job. Soldiers with a self-determined profile engage in their job out of pleasure and choice and are not motivated by internal or external pressures. In other words, for these soldiers, avoiding unemployment and ensuring a salary are not important reasons underlying their work behaviors. Finally, soldiers with a mixed profile get involved in their job because they have fun doing it, because it makes them feel proud of themselves, and because supervisors can offer them job security. In other words, they work in the army for both autonomous (e.g., self-development opportunities) and controlled (e.g., tangible rewards) reasons.

Although prior studies in the work domain had also uncovered these profiles (e.g., Moran et al., 2012), other studies had not (e.g., Van den Broeck et al., 2013). As previously mentioned, these differences in results across studies using profile approaches may be due to methodological differences (e.g., measures, subscale aggregation methods, statistical approaches). The prevailing context may also have an influence on the types of motivational profiles that are prevalent in a given domain (see Ratelle, Guay, Vallerand, Larose, & Senécal, 2007). More specifically, in the military context, soldiers are expected to comply with rules and adhere to standardized procedures. In addition, the supervisor–employee relationship is based on submission to the hierarchy. In contrast, in other organizations, managers may encourage employees to question procedures, innovate, and build new solutions (Chambel et al., 2015). Thus, it is possible that soldiers' motivational profiles would be characterized by higher levels of controlled motivation than those identified in other work settings.

In addition, although we attempted to increase the generalizability of the present results by sampling contract (Sample 1) and career (Sample 2) soldiers, the present findings were still obtained in a specific population, that is French Air Force soldiers. Of interest is that Chambel et al. (2015) found similar levels of autonomous motivation among soldiers from the Portuguese army. In addition, very similar motivational profiles have been found in the education (e.g., Ratelle et al., 2007) and sport (e.g., Gillet et al., 2012) contexts. These results suggest that different real-life settings may yield similar motivational profiles. However, although the statistical method used in the present research (i.e., LPA) offers several advantages over cluster analyses used in prior studies, very little research used a person-centered approach to examine workers' motivational profiles. Moreover, this is the first research to identify employees' motivational profiles in the military context. Yet, a critical issue for research in this approach lies in the replication of profiles to generalize results (see Asendorpf, 2003). As recommended by several researchers (e.g., Morin et al., 2011), we examined how the latent profiles relate to other dimensions (e.g., work engagement) to support a substantive interpretation of these profiles but additional investiga-

tions in the work area are necessary to confirm the existence of these motivational profiles in the military context and among other samples of workers (e.g., nurses, storekeepers, teachers).

A second implication of the present research is that the motivational profiles differentially relate to work engagement, and positive and negative affect. Specifically, the low profile was associated with the lowest levels of work engagement and positive affect, and the highest levels of negative affect. In contrast, there were no significant differences on the latter between the low and moderate profiles (Hypotheses 2 and 3). By showing that the least autonomous profile (i.e., low profile) related to maladaptive functioning, our results provide support for SDT (Deci & Ryan, 2000). They are also in line with prior studies in other domains that found that the combination of low to moderate levels autonomous motivation and moderate to high levels of controlled motivation was associated with negative behaviors (e.g., Gillet et al., 2012). This means that soldiers should not display low levels of both autonomous and controlled motivation. Indeed, in this case, soldiers have low work engagement and well-being, but high ill-being. Yet, this is exactly the inverse pattern that should be encouraged in the army as prior studies in military settings showed that work engagement and well-being, contrary to ill-being, lead to the most adaptive behavioral patterns (e.g., Alarcon et al., 2010; Boermans et al., 2014).

What is striking in the present findings is that the mixed profile was associated with higher levels of work engagement and positive affect than the self-determined profile in both samples. Gillet et al. (2010) also showed that workers with the mixed profile were the best performers. It thus appears that high levels of introjected regulation and moderate levels of external regulation are not harmful for workers' engagement and positive affect if they are associated with high levels of autonomous motivation. Such results are particularly fruitful given that they expand SDT by suggesting that introjected regulation, and to a lesser extent external regulation, add to individuals' optimal functioning in addition to high autonomous motivation in the work context. However, we cannot conclude that a mixed profile relates to lower levels of negative affect than does a self-determined profile as soldiers with the self-determined profile

had lower scores on negative affect than those with the mixed profile (Hypothesis 3).

More generally, as demonstrated by Van den Broeck et al. (2013), these findings confirm that the effects of motivational profiles differ as a function of the variables under study. It is important to note that it would not have been possible to demonstrate such results in a variable-centered approach and more precisely with interactions between global scores of autonomous and controlled motivation. Indeed, as shown in previous research (e.g., Gillet et al., 2010; Graves et al., 2015), the present results revealed that we need to distinguish between introjected and external regulations when we look into workers' motivational profiles. Moreover, by adopting a person-centered approach, we were not confronted with the complexity of interactions required to adequately represent workers' motivation (i.e., involving at least four interacting forms of motivation) and able to examine the links between motivational profiles and other dimensions such as work engagement and affect.

The significant differences found on work engagement and positive affect between the mixed and self-determined profiles may be explained by the fact that soldiers with the self-determined profile had lower scores on autonomous motivation, especially on identified regulation in Sample 2, than those with the mixed profile. Does a motivational profile characterized by high levels of autonomous motivation and introjected regulation, and low levels of external regulation lead to more adaptive behaviors than a motivational profile characterized by high scores on all forms of motivation? If future studies in the military setting explore this question and confirm this hypothesis, they might conclude that displaying high levels of both autonomous motivation and introjected regulation is beneficial, only if the scores on external regulation are low. More generally, future research is needed to investigate the links between motivational profiles and other positive (e.g., job satisfaction, organizational commitment) and negative (e.g., turnover, stress symptoms) attitudes/behaviors.

A third implication of the present research is that it also adds to the literature on the links between organizational factors and motivational profiles. Specifically, in Sample 1, perceived organizational support was lower in the low and

moderate profiles than in the mixed profile. In Sample 2, results also revealed that soldiers with the mixed profile did not differ from those with the self-determined profile but had higher scores than those with the low and moderate profiles on perceived organizational support, communication, and supervisor support (Hypothesis 4). These results are consistent with those of past investigations showing that job resources positively related to autonomous motivation (e.g., Gillet, Gagné, et al., 2013). Given that the two motivational profiles with the highest levels of autonomous motivation were associated with the highest levels of work engagement and positive affect, and the lowest levels of negative affect, results advocate the promotion of autonomous motivation through organizational and supervisor support, and communication. However, further research is still needed on the relationships between other job resources (e.g., organizational justice, coworker support) and workers' motivational profiles.

From a practical perspective, practitioners may encourage supervisors to work at providing the available information about soldiers' work, in particular, concerning performance feedback, and thus giving soldiers the opportunity to check on how well they are doing their work. Supervisors should also help the soldiers to solve their problems at work, create a good atmosphere between them and the soldiers (e.g., develop a balanced relationship with subordinates based on trust and support), and recognize the potential of their followers. More generally, supervisors should facilitate the soldiers' psychological needs to improve their autonomous motivation and promote their work engagement and well-being (Gagné & Deci, 2005).

Our results also suggest that autonomous motivation, work engagement, and positive affect might be promoted in work environments in which the level of perceived organizational support is increased. Research has begun to identify factors that enhance perceived organizational support and test actions to enhance organizational support. For instance, Rhoades and Eisenberger (2002) showed that fairness (e.g., formal rules and policies concerning decisions that affect soldiers, adequate notice before decisions are implemented, treating soldiers with dignity and respect) and rewards/job conditions (e.g., no demands that exceed what a soldier can reasonably accomplish in a given time, clear information about one's job responsibilities, no mutually incompatible job responsibilities) increase perceived organizational support. In their meta-analysis, Kurtessis et al. (in press) also examined the antecedents of perceived organizational support (i.e., leadership, employee-organization context, human resource practices, and working conditions). Results revealed that transformational leadership (e.g., providing soldiers with purpose and efficacy), job security (e.g., having assurance that the army wishes to maintain the soldier's future membership), and participation in decision-making (e.g., soldier input in the decision process) were positively related to perceived organizational support. Eisenberger and Stinglhamber (2011) also encouraged managers to engage in supportive behaviors and promote human resources policies that foster perceived organizational support. For instance, soldiers often view training programs as based on management's self-interest and without interest for them. However, when training is framed as a way to stimulate personal growth in work-related skills, such training contributes to perceived organizational support.

Practitioners should also consider individual differences (e.g., identity, personality) and contextual factors, when they are trying to promote organizational support in the army. Indeed, Kim, Eisenberger, and Baik (2016) showed that perceived organizational competence moderates the relationship between perceived organizational support and affective organizational commitment such that perceived organizational support is more strongly associated with affective organizational commitment when perceived organizational competence is high than when it is low. In other words, these findings suggest that army may benefit more by enhancing perceptions of organizational support particularly when soldiers have positive personal beliefs about their referent (e.g., their department) competence. In line with this area of research, an interesting question that could be examined in future investigations is whether the factors contributing to perceived organizational support are the same for career and contract soldiers as their perceptions of job security may be different because of their employment contract types (i.e., permanent vs. temporary contract).

With regards to controlled motivation, the picture is not as clear because introjected regulation can act in synergy with autonomous mo-

tivation in the prediction of work engagement and positive affect, but the mixed profile was associated with higher levels of negative affect than the self-determined profile. The present findings are in agreement with past studies (e.g., Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011) suggesting that holding high levels of controlled motivation predict workers' negative affect as it is associated with high scores on need thwarting. Therefore, future studies would do well to identify the organizational and managerial factors (e.g., hindrance demands, laissez-faire leadership) that may facilitate the thwarting of the psychological needs and contribute to the development of controlled motivation.

The present research has some limitations as well. First, the present samples only comprised soldiers from one country (France) and from a specific force (i.e., the Air Force). Future research with French soldiers of the Land Force or the Sea Force, as well as soldiers and workers from other countries and different cultures is needed to replicate and extend the present findings. It is also necessary to confirm that the motivational profiles identified in the present research can be replicated in various groups of soldiers with different organizational tenure (e.g., 1 to 5 years, 6 to 10 years). Second, it should be underscored that the design used was correlational in nature. Consequently, we cannot infer causality from the present findings and show whether perceived organizational support causes motivation or motivation impacts well- and ill-being. Although past longitudinal and experimental investigations have supported the idea of directional relationships through which motivation influences work engagement and affect (e.g., Gillet, Vallerand, et al., 2013), we indeed recognize that work motivation and engagement or affect may be reciprocally related. Future research investigating possible reciprocal relations among these dimensions is thus needed. Researchers may also examine, in future longitudinal studies, the stability of the motivational profiles over time, and what role do they play in predicting work engagement and affect but also other variables of interest (e.g., performance, turnover). More specifically, using a longitudinal design, future research may address the joint issues of within-person profile stability (i.e., the longitudinal stability in the work motivational profiles exhibited by specific individuals such as the privates) and within-sample profile stability (i.e., whether the nature of the work motivational profiles changes over time). Finally, we only relied on self-report measures but multiple method of assessment could be included in future studies. For instance, as our measure of perceived organizational support was in the eye of the soldiers, future research might benefit from combining both leaders' and employees' perspectives to develop more valid representations of the organizational context and minimize the possible biases associated with common method variance.

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