A Motivational Model of Daily Hassles, Physical Symptoms, and Future Work Intentions Among Police Officers[1]

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This study tested a motivational model of daily hassles, physical symptoms, and future work intentions with a sample of 122 police officers. In agreement with self-determination theory (Deci & Ryan, 1985, 2002), path analyses showed that police officers who perceived their immediate supervisor as highly supportive of their autonomy were found to report higher levels of self-determined motivation toward work. In turn, higher levels of self-determined motivation were found to be associated with higher future work intentions and lower levels of reported daily hassles. Finally, daily hassles were found to be positively associated with reported physical symptoms. Contrary to our hypotheses, perception of competence support from supervisors was not found to be significantly associated with self-determined motivation. Instead, competence support was found to be negatively associated with daily hassles.

There is little doubt that police officers are exposed to various sources of stress. Routine operational duties (e.g., informing relatives of a sudden death, dealing with victims of violence, appearing as a witness in court) as well as duties associated with potential risk (e.g., confronting a person with a gun, intervening in a robbery, participating in a high-speed chase) constitute important sources of stress for police officers (Brown & Campbell, 1990; Cullen, Link, Lawrence, & Lemming, 1983; Gudjonsson & Adlam, 1983). Interestingly, police officers report job-related factors as being less stressful than organizational factors such as staff and manpower shortages, shift work, time pressures, lack of communication, excessive paperwork, and poor supervision (Biggam, Power, MacDonald, Carcary, & Moodie, 1997; Brown & Campbell, 1990; Crank & Caldero, 1991; Kroes, 1976; Stansfield, 1996; Toch, 2002).

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Police officers' experiences of such chronic stressors make them particularly prone to suffer from high rates of hypertension, stomach ulcers, respiratory problems, skin problems, and migraines (Stansfield, 1996; Violanti, Vena, & Marshall, 1986). However, there is also empirical evidence showing that police officers are no more likely to suffer from stress-related disorders than are other occupational groups (Golembiewski & Kim, 1990). Police stress also has been associated with adverse consequences for police organizations, including intentions to leave the profession for other careers, absenteeism, early retirement, and psychological burnout (Burke, 1993; Kroes, 1976; Tang & Hammontree, 1992).

Although this unique occupational group is exposed inevitably to various stressors, it appears that a number of individual and organizational factors affect the extent to which police officers suffer from stress and stress-related symptoms (Brown & Campbell, 1994; Cooper, Kirkcaldy, & Brown, 1994; Malloy & Mays, 1984). However, limited research has incorporated both personal and organizational factors in explaining perceived stress, thus some researchers have advised on the necessity to elaborate and test such an integrative model (Marmot & Madge, 1987).

In the context of the present study, we are interested in verifying if police officers' motivation toward their work, as a personal factor, and the interpersonal behaviors of their immediate supervisor, as an organizational factor, could explain better why some police officers experience more stress and physical symptoms than do others. Specifically, the purpose of this study is to propose and test a model that integrates both individual and organizational factors in the prediction of perceived daily hassles, reported physical symptoms, and future work intentions among police officers.

The Proposed Model

The proposed motivational model of daily hassles, physical symptoms, and future work intentions is based on the tenets of self-determination theory (SDT; Deci, & Ryan, 1985, 2002). We theorize (Figure 1) that police officers' perceptions of their immediate supervisor's interpersonal behaviors will be related to their self-determined motivation toward work. More specifically, supervisors' autonomy support will be associated positively with self-determined motivation. Similarly, perceptions of one's supervisor as providing competence support will be associated positively with self-determined motivation. The two dimensions of interpersonal behaviors will be associated positively with each other. Higher levels of self-determined motivation will be associated with higher intentions to stay in the police organization and with lower levels of perceived daily hassles. In turn, lower perception of daily hassles will be associated with a report of fewer physical symptoms. In the following sections, we review existing research and theory relevant to these propositions.

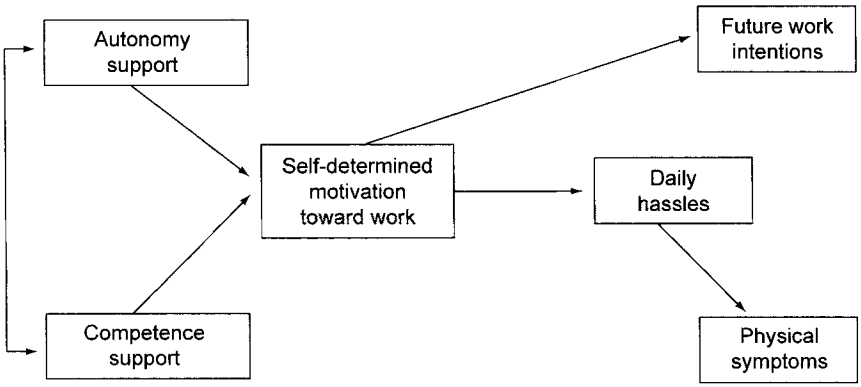

Figure 1. Proposed motivational model of daily hassles, physical symptoms, and future work intentions among police officers.

Motivation for Work

According to SDT (Deci & Ryan, 1985, 2002), motivation for engaging in an activity can be either self-determined or non–self-determined. A motivation is *self-determined* when an activity is initiated for autonomous reasons; and its execution is associated with feelings of pleasure, choice, and personal importance. Illustrations of self-determined work motivation are when officers go to work because they experience feelings of accomplishment and pleasure when helping citizens, or when officers choose to work extra hours in a crisis situation because they value their job personally.

By contrast, a motivation is *non–self-determined* when a behavior is performed out of external pressure (e.g., rewards, punishments) or internal pressure (e.g., sense of obligation, guilt, shame). In this case, individuals behave in a certain way because they feel they *should* or *must*, not because they *want to* or *choose to*. Examples of non–self-determined work motivation are when officers go to work only for the financial benefits or to feel good about themselves. Considerable research has demonstrated the benefits of self-determined motivation on various indicators of psychological well-being and healthy behaviors, such as life satisfaction, self-esteem, interest, vitality, regular exercise, and smoking cessation (Kasser & Ryan, 1996; Ryan & Frederick, 1997; Sheldon & Kasser, 1995; Williams, Gagné, Ryan, & Deci, 2002).

Consequences of Motivation

In the present study, we propose that self-determined work motivation will be associated positively with future intentions to remain in a job and negatively with perceived daily hassles. Several studies have found associations between

self-determined motivation and various persistence variables, such as a greater persistence to carry out environmentally friendly behaviors (Séguin, Pelletier, & Hunsley, 1998), fewer school dropouts (Vallerand, Fortier, & Guay, 1997), fewer sports dropouts (Pelletier, Fortier, Vallerand, & Brière, 2001; Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002), and greater personal dedication to personal goals (Sheldon & Elliot, 1998).

Specific to the work domain, Richer, Blanchard and Vallerand (2002) provided support for the usefulness of self-determined work motivation in the prediction of turnover intentions. They found that self-determined motivation leads to less emotional exhaustion and more work satisfaction. Emotional exhaustion leads to more turnover intention, whereas work satisfaction leads to less turnover intention. Moreover, turnover intention was found to determine actual turnover behavior 1 year later.

The second outcome, *daily hassles*, refers to minor events that represent a source of irritation for individuals. However, daily hassles can become a significant source of stress when individuals experience them continuously or in a great quantity. Individual differences in perceived occurrence of daily hassles have been revealed (Nelson, Karr, & Coleman, 1995). Because self-determined motivation has been associated with less pressure and more enjoyable behaviors (Pelletier, Tuson, & Haddad, 1997; Ryan & Connell, 1989), it seems likely that high self-determined motivation toward work would lead to a lower perception of daily hassles. In addition, feelings of a sense of volition and competency that accompany self-determined motivation could allow an individual to perceive unpleasant daily events (e.g., problems with colleagues) as more of a challenge instead of a stressor, since he or she possesses the resources and self-assurance to deal with them.

Moreover, periods of prolonged stress and negative emotions have been associated with the development of certain physical symptoms and illness (Chang, 1998; DeLongis, Folkman, & Lazarus, 1988; Epstein & Katz, 1992). Stress depresses the immune system so that stressed individuals are more susceptible to disease and thus more likely to experience physical symptoms. Therefore, we propose that a lower level of perceived daily hassles will lead to a lower report of physical symptoms. The self-determined motivation/stress/health sequence has been supported in the work domain in a longitudinal study among teachers (Blais, Hess, Bourbonnais, Saintonge, & Riddle, 1995). Results revealed that self-determined motivation toward work and perceived daily hassles at Time 1 both predicted burnout and work satisfaction at Time 2. In turn, burnout predicted physical health problems and mental distress.

On the Social Determinants of Work Motivation

In our model, two dimensions of supervisors' interpersonal styles are considered: autonomy support and competence support. Supervisors support the

autonomy of their subordinates by encouraging self-involvement through allowing them to make choices and decisions about their work. For example, officers could be involved in the development of departmental policies and procedures. When employees face an aspect of the job in which there is no free choice, an autonomy-supportive supervisor seeks to minimize feelings of coercion by providing them with a meaningful rationale and acknowledging their feelings and perspectives (Deci, Eghrari, Patrick, & Leone, 1994; Reeve, Jang, Hardre, & Omura, 2002).

Strong empirical evidence has supported the positive effect of autonomy support on self-determined motivation in the workplace. For instance, an intervention directed toward teaching managers autonomy support was found to positively influence employees' intrinsic motivation (Deci, Connell, & Ryan, 1989). Senécal, Vallerand, and Guay (2001) found that self-determined motivation toward work was predicted directly by the extent to which the individual felt autonomy support from his or her employer. Furthermore, Baard, Deci, and Ryan (2004) observed that the autonomy supportiveness of managers was associated positively with employees' feelings of autonomy, competence, and relatedness; which in turn were related to greater work performance and adjustment, as measured with vitality, anxiety, and somatization questionnaires. In agreement with these findings, we suggest that police officers' perceptions of their supervisor as autonomy-supportive will lead to a more self-determined motivation toward work.

The second dimension of supervisors' interpersonal style refers to competence support. *Competence support* refers to the ability of a supervisor to communicate information regularly to his or her subordinates in order to guide their performance and to promote their sense of confidence. When an officer has not performed well, a supervisor can support his competence by attempting not to emphasize his faults, but to underline the positive aspects of his performance while giving suggestions on how to correct or improve his performance.

Past research has found that negative feedback administered in a controlling context undermines self-determination (Deci, 1971; Vallerand & Reid, 1988). In the work context, Gagné, Senécal, and Koestner (1997) studied the effects of different job dimensions on feelings of empowerment and workers' motivation. Their results showed that positive feedback from supervisors and coworkers significantly predicted intrinsic motivation. Similarly, feelings of job competence were found to be determinants of self-determined work motivation (Richer et al., 2002). Thus, we propose that perceived competence support will lead to more self-determined motivation in police officers. In summary, this study attempts to understand police officers' stress and its association with physical symptoms as a consequence of their individual motivational orientations and perceptions of their supervisor's interpersonal style.

Method

Participants

A sample of 140 French-speaking police officers (117 male, 23 female) participated in the study. Participants were recruited from all of the police stations in the Outaouais region of Québec, Canada. Considering that 400 questionnaires were sent to the police stations, the response rate is 35%. A total of 68.9% of the participants were constables, 19.2% were sergeants, 7.4% were lieutenants, and 4.5 % were captains. Participants' ages ranged between 21 and 56 years (M = 37.0 years), and they had between 0.5 and 36 years of work experience (M = 14.56 years). Participants' level of education was distributed in the following categories: high school or less (11.6%), some college (64.5%), and university degree (23.9%).

Procedure

Questionnaires were mailed to a designated police officer in each police station. The officer was instructed to distribute the questionnaires to his colleagues without any discrimination with regard to their rank and gender, and to emphasize the voluntary and anonymous nature of their participation in the study. The cover letter included with the questionnaire explained that the purpose of the study was to understand better the behaviors and attitudes of individuals whose work may involve some risks.

Approximately 20 min were needed to complete the questionnaire. Participants returned their completed questionnaires in sealed envelopes to the designated officer.

Measures

Supervisors' interpersonal behaviors. To measure autonomy support, we developed three items ("My supervisor encourages me to be myself"; "My supervisor provides me with lots of opportunity to make personal decisions in what I do"; and "My supervisor openly acknowledges my thoughts and feelings although they may be different from his/hers"). Cronbach's alpha for the autonomy support scale was .71. To measure competence support, we developed three items ("My supervisor sends me the message that I'm inadequate"; "The feedback I get from my supervisor makes me feel uncertain about my capacities"; and "My supervisor only tells me about my faults"). The items were reverse scored. Cronbach's alpha for the competence support scale was .77. Participants indicated the frequency with which their immediate supervisor acted according to the different behaviors illustrated by the items on a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*always*).

Motivation toward work. To measure motivation toward work, we used the Blais Work Motivation Scale (Blais, Brière, Lachance, Riddle, & Vallerand, 1993). It is composed of five subscales that assess the different types of motivation proposed by Deci and Ryan (1985). Those subscales are intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation. The scale contains 20 items, with 4 items per subscale. Each item represents a possible answer to the question "Why are you doing this kind of work?" A sample item for intrinsic motivation is "For the satisfaction I experience in trying to meet the challenge of my work." Participants rated the degree of correspondence between the reason illustrated by the item and their personal reasons for going to work on a 7-point scale ranging from 1 (*not at all*) to 7 (*exactly*).

Subscales can be used separately or in combination to form a summary score called the *self-determination index* (SDI). In order to facilitate the interpretation of results from path analyses, we chose to use the SDI. In line with previous studies that have used this index (Blais, Sabourin, Boucher, & Vallerand, 1990; Grolnick & Ryan, 1987; Senécal et al., 2001), we first assigned a specific weight for each subscale as a function of its position on the self-determination continuum. Positive weights were assigned to self-determined types of motivation: +2 for intrinsic motivation and +1 for identified regulation. Negative weights were allocated to non–self-determined types of motivation: -1 for external regulation and -2 for amotivation.[3] One individual motivation item for each subscale was multiplied by its associated weight and all of the products were summed. Because each subscale is composed of four items, we calculated four SDI indexes. The four SDI indexes were summed and divided by 4 to obtain an overall measure representing the relative autonomy of a participant's motivation toward work. Cronbach's alpha for the SDI was .88. The possible range for the SDI is -18 to +18.

Perception of daily hassles. A 30-item scale, the Daily Hassles Inventory (DHI; Campbell, 1998), which is composed of five subscales corresponding to five types of daily hassles experienced by young adults (academic, achievement, uncertainty about the future, interpersonal concerns, and family relations) was adapted to represent police officers' perceptions of daily hassles. Except for the academic subscale, which was replaced by the work subscale, all other subscales were retained.

[3]We measured two types of self-determined motivation and three types of non–self-determined motivation. Thus, in order to achieve a balanced mathematical equation (i.e., each positive value is counterweighted by a negative value), a non–self-determined type of motivation had to be excluded from the SDI. Since we were interested in the prediction of stress and physical symptoms, it was considered more appropriate to include the two types of non–self-determined motivation that are associated with the least desirable outcomes. Therefore, we included external regulation and amotivation, and we excluded introjected regulation.

Sample items for each subscale are as follows: work—"Having deadlines"; achievement—"Not achieving my personal goals"; uncertainty about the future—"Not knowing what to expect in the future"; interpersonal concerns—"Being teased by others"; and family relations—"Not meeting the expectations of my family." Participants indicated the extent to which each item represents for them a source of daily hassles on a 7-point scale ranging from 1 (*not at all*) to 7 (*enormously*). Cronbach's alpha for this measure was .91.

Perception of physical symptoms. An adapted French version of Pennebaker's (1982) scale was used to assess perception of physical symptoms. This scale is a 35-item checklist covering a wide range of physical symptoms, including musculoskeletal system symptoms (e.g., backaches, swollen ankles), respiratory system symptoms (e.g., nasal congestion, coughing), digestive system symptoms (e.g., nausea, constipation), stress-related symptoms (e.g., headache, nervous movement of the eyelid), and more serious symptoms (e.g., nosebleed, racing heart). Cronbach's alpha for this measure was .87. Participants indicated the frequency with which they experienced each symptom during the past 3 weeks on a 5-point rating scale ranging from 1 (*not at all*) to 5 (*very often*).

Future work intentions. Participants' future intentions regarding work were assessed with five items ($\alpha = 77$) adapted from Pelletier, Fortier, Vallerand, and Brière (2001). A sample item is "Sometimes, I think about leaving the force." Participants had to indicate the extent of their agreement with the items on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Results

Preliminary Analysis

Prior to submitting the data to path analysis, the data were screened for outliers among cases. An analysis of casewise residuals revealed no univariate outliers (i.e., no cases were beyond 3 standard deviations of the mean) and no multivariate outliers. Cases with missing values were deleted, which constituted 18 cases. Thus, the final sample size was 122 participants.

Individual variables of the model were tested for the assumptions underlying path analysis (i.e., normality, homoscedasticity, and linearity). Patterns of normal probability plots reveal that support of autonomy, self-determined motivation, daily hassles, and future work intentions were distributed normally. However, competence support displayed a slight positive distribution, whereas physical symptoms had a slight negative distribution. All of the variables also had low degrees of skewness ($M = 0.75$) and kurtosis ($M = 0.60$), except for competence support, of which skewness (-1.22) and kurtosis values (2.04) exceeded the ± 1 level of acceptance (Mùthen & Kaplan, 1985). Bivariate scatterplots for each variable show no pattern of increasing or decreasing residuals and no nonlinear

pattern, thus meeting the assumptions of homoscedasticity and linearity, respectively.

Descriptive Statistics

Table 1 presents the descriptive statistics of each variable in the proposed model. Participants' mean rating of their supervisor's autonomy support was above the midpoint of the 7-point scale ($M = 4.22$, $SD = 0.97$). Comparatively, participants' mean rating of their supervisor's competence support was higher and well above the midpoint of the 7-point scale ($M = 5.65$, $SD = 1.22$).

Overall, participants perceived to a greater extent that their supervisors were conveying feelings of competence, rather than providing insufficient competence support. However, as indicated by the range of the competence support variable (range = 1 to 7), some participants perceived their supervisor as very unsupportive of their competence.

For the SDI, participants' scores ranged from -8.00 to 15.50, with a mean indicating that participants were moderately self-determined ($M = 6.96$, $SD = 4.65$). Participants' perceived daily hassles score ranged from 1.27 to 6.40, with a mean score falling below the midpoint of the 7-point scale ($M = 3.13$, $SD = 1.00$).

Participants' mean score on physical symptoms fell below the midpoint of the 5-point scale, and there was no participant whose mean score fell above 3. Despite this, physical symptom scores were distributed normally ($M = 1.59$, $SD = 0.42$; skewness = 0.75; kurtosis = -0.40). Participants' mean scores on future work intentions were above the midpoint of the 7-point scale ($M = 4.81$, $SD = 1.38$).

Correlations

Correlations among all variables are presented in Table 1. As expected, perception of autonomy support and competence support were both associated positively with self-determined motivation ($r = .38$, $p < .01$; and $r = .28$, $p < .01$, for autonomy support and competence support, respectively). Support of autonomy and competence also were correlated positively with each other ($r = .43$, $p < .01$).

Both dimensions of interpersonal behaviors were expected to be unrelated to daily hassles and physical symptoms. However, competence support was found to be related significantly with both daily hassles ($r = -.31$, $p < .01$) and physical symptoms ($r = -.35$, $p < .01$). As predicted, self-determined motivation was related negatively to daily hassles ($r = -.32$, $p < .01$), but it was also found to be related negatively to physical symptoms ($r = -.34$, $p < .01$). Daily hassles and physical symptoms were related in the expected direction ($r = .62$, $p < .01$). Finally, only the SDI was expected to correlate with future work intentions. The SDI was found to correlate positively with future intentions toward work ($r = .56$,

Table 1

Descriptive Statistics and Correlations Among Model Variables

Variable	*M*	*SD*	Min.	Max.	Skewness	Kurtosis	2	3	4	5	6
1. Autonomy support	4.22	0.97	1.00	6.75	-0.52	0.28	.43*	.38*	-.11	-.12	.32*
2. Competence support	5.65	1.22	1.00	7.00	-1.22	2.04		.28*	-.31*	-.35*	-.16
3. SDI	6.96	4.65	-8.00	15.50	-0.66	0.41			-.32*	-.34*	.56*
4. Daily hassles	3.13	1.00	1.27	6.40	0.49	0.02				.62*	-.16
5. Physical symptoms	1.59	0.42	1.00	2.60	0.75	-0.40					-.17
6. Future work intentions	4.81	1.38	1.20	7.00	-0.84	0.47					

Note. $N = 122$. SDI = self-determination index.
*$p < .01$.

$p < .01$), but support of autonomy was also found to correlate positively with future work intentions ($r = .32, p < .01$).

Test of Proposed Models

To test the hypothesized model depicted in Figure 1, a path analysis was conducted using the EQS/Windows program, Version 5.7b (Bentler & Wu, 1993). The covariance matrix was used as input data for the analyses.

The maximum likelihood (ML) estimation method was chosen to generate standardized parameter estimates for each hypothesized relationship. Following researchers' recommendations and evaluations of these measures (Byrne, 1994; Gerbing & Anderson, 1993), the adequacy of fit for the present model was based on: (a) the chi-square likelihood ratio; (b) Bentler's (1990) revised normed comparative fit index (CFI); (c) the root mean square error of approximation (RMSEA; Steiger, 1990); and (d) the parsimonious normed CFI (PCFI; Mulaik et al., 1989).

A nonsignificant chi-square value indicates a good model fit, while a significant chi-square value suggests lack of satisfactory model fit. The CFI varies from 0 to 1. By convention, a CFI that is equal to or greater than .90 indicates an acceptable fit. Concerning the RMSEA, values less than .08 indicate an acceptable fit, while those equal to or less than .05 indicate a good adjustment (Brown & Cudeck, 1989). Higher values of PCFI are desirable. However, the cutoff for the PCFI is lower than for the CFI. It is common to have a PCFI of .50 for a CFI of .90 (Mulaik et al., 1989).

Overall results from the path analysis reveal that the proposed model provided an acceptable, but not ideal fit for the data. Although the CFI (CFI = .94) and PCFI (PCFI = .56) were acceptable, the chi square was significant, $\chi^2(9, N = 122) = 19.07, p = .02$; and the RMSEA value (.10) was above the cutoff. In addition, the hypothesized path coefficient between competence support and the SDI was not significant (z values < 1.96). The multivariate Wald test also identified the path between competence support and the SDI as redundant, $\chi^2(1, N = 122) = 1.71, p = .19$; and thus it was deleted.

Further investigation of model misspecification was done to improve the fit of the model. To this end, results of the multivariate Lagrange multiplier (LM) test were examined. The LM test targets misspecification of fixed parameters in the model and gives the expected significant drop in chi square if these parameters were freed up in a next run. One parameter had a distinctively higher LM chi-square value compared to the others. This parameter revealed a direct effect of competence support on daily hassles. Theoretical justification for the inclusion of this unestimated relationship could be provided.

The revised model provided a very good fit to the data, $\chi^2(9, N = 122) = 13.41, p = .14$ (CFI = .97; RMSEA = .06; PCFI = .59). Each hypothesized

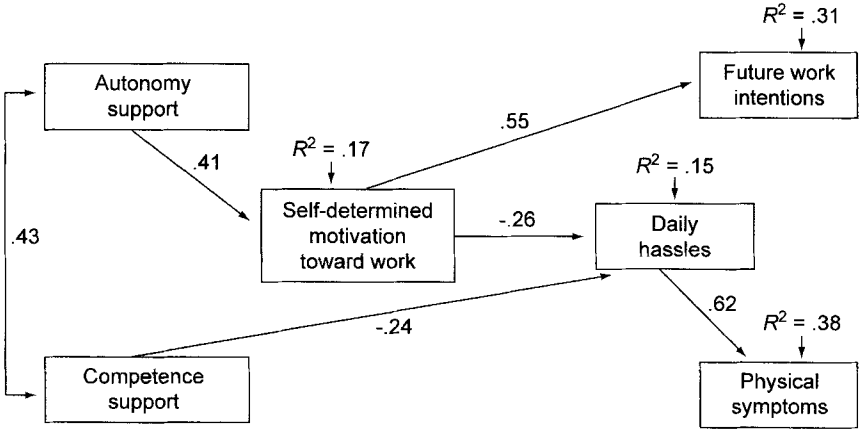

Figure 2. Revised motivational model of daily hassles, physical symptoms, and future work intentions among police officers. All standardized parameters are significant at $p < .05$.

relationship was found to be significant (z values > 1.96). More specifically, competence support was associated negatively with daily hassles (β = -.24), while support of autonomy was associated positively with the SDI (β = .41).

Autonomy support was related positively to competence support (β = .43). The SDI was associated positively with future work intentions (β = .55) and negatively with daily hassles (β = -.26). Daily hassles were associated positively with physical symptoms (β = .62). A schematic representation of the revised model with all of the beta weights and the explained percentage (R^2) is presented in Figure 2.[4]

We also tested three alternative models. Considering that our analyses found that competence support directly determined daily hassles, we tested an alternative model in which the other interpersonal behavior (i.e., autonomy support) also directly and negatively determined daily hassles. In other words, this model tested the possibility that autonomy support, competence support, and the SDI

[4]In agreement with a theory-trimming process (Pedhazur, 1982), we performed independently a series of multiple regressions in order to verify the proposed sequence in the revised model while controlling for age, gender, rank, and years of experience. These analyses, performed in the SPSS program, reveal that all links reported in our revised model remained significant, even when controlling for the demographic variables. The only instance in which the demographic variables contributed significantly to the explained variance of the variables in the model was for the multiple regression with self-determined motivation as a dependant variable and autonomy support as a predictor. In this regression, gender (B = .24), rank (B = .19), and autonomy support (B = .36) contributed together to explain 22% of the variance in self-determined motivation.

were all equal antecedents to daily hassles. No mediation by SDI was postulated. Again, autonomy support and competence support were expected to relate positively with each other. Daily hassles were postulated to be positively associated with physical symptoms. The SDI also was predicted to be associated positively with future work intentions. Results reveal that this alternative model was a poor fit to the data, $\chi^2(9, N = 122) = 33.29, p < .001$ (CFI = .86; RMSEA = .15; PCFI = .52). Furthermore, the hypothesized path coefficient between autonomy support and daily hassles was not significant.

We also examined the possibility that perceived daily hassles could influence motivation. Specifically, the second alternative model proposed that both interpersonal behaviors were associated with daily hassles. Autonomy support and competence support were proposed to lead to lower daily hassles. Perception of daily hassles was proposed to be associated positively with self-determined motivation. In turn, self-determined motivation was proposed to be associated positively with future work intentions. Finally, perception of daily hassles was hypothesized to be associated positively with physical symptoms. Again, the model fit was unsatisfactory, $\chi^2(9, N = 122) = 30.15, p < .001$ (CFI = .88; RMSEA = .14; PCFI = .53), and the hypothesized path coefficient between autonomy support and daily hassles was not significant.

It makes sense intuitively that a worker who has either low intention to remain in a job or who suffers from multiple physical symptoms will develop lower motivation and, in turn, that lower motivation will lead to perceiving a supervisor less positively. Thus, the last alternative model we tested involves a complete reversal of the revised model. This model hypothesizes that future work intentions will lead to less self-determined motivation, which will lead, in turn, to less perception of autonomy support from one's supervisor. At the same time, physical symptoms will lead to more daily hassles. Finally, daily hassles influenced negatively self-determined motivation and perception of competence. The positive link between perceptions of autonomy support and competence support was still hypothesized. The results reveal that this model provided a lower fit to the data, $\chi^2(9, N = 122) = 17.90, p = .04$ (CFI = .95; RMSEA = .09; PCFI = .57).

In summary, three alternative models that could account for the relationship among the variables had unsatisfactory fit to the data. Overall, the proposed model represented the best model that could explain the relationships among the variables.

Discussion

Much research has worked with the assumption that police work is inherently stressful and, therefore, has tried to explain why some police officers experience more or less stress and suffer the resulting negative effects of stress. The purpose

of this study was to propose and test a motivational model that integrated both individual and organizational factors in the determination of police stress, reported physical symptoms, and future intentions toward work. Specifically, in agreement with self-determination theory (Deci & Ryan, 1985, 2002), the model posited that both perceived autonomy support and competence support from one's supervisor would be associated positively with police self-determined motivation toward work. Next, self-determined motivation was hypothesized to be associated positively with future work intentions and negatively with perceived daily hassles. Finally, perception of daily hassles was proposed to be related positively to reported physical symptoms.

Results from path analysis provide general support for the proposed model. As expected, the degree to which police officers experienced their immediate supervisor as autonomy-supportive was found to be positively associated with their self-determined motivation. However, police officers' perceptions of their supervisor as providing competence support failed to emerge as a significant determinant of their self-determined motivation. Instead, competence support was found to be related directly to a lower perception of daily hassles.

Consistent with our hypotheses, self-determined motivation toward work was found to be associated with higher future intentions to stay in the police force and fewer perceived daily hassles. Finally, as anticipated, the more police officers perceived daily hassles, the more they reported physical symptoms. Three alternative models were tested, but none offered a better fit to the data than did the proposed model.

Consequences of Self-Determined Motivation

Consistent with several other studies, self-determined motivation was found to be linked positively to important consequences. First, self-determined motivation was found to be associated positively with future work intentions. The more police officers were self-determined toward their work, the more they reported intentions to continue working as long as they could before their retirement. Conversely, the less police officers were self-determined toward their work, the more they thought about leaving the force and reported intentions to work the minimum amount of time before their retirement.

This finding has important implications for police officers and police organizations. Police officers who leave the force well before their retirement need to reorient their careers and may not receive their entire pension plan. For the organization, voluntary resignations mean losing experienced employees, after which energy and time must be expended to employ and train new officers. Among the strategies employed to reduce waste as a result of voluntary resignations in police departments is the use of personality tests to detect if applicants are more susceptible to suffer stress (Gudjonsson & Adlam, 1983). The present study suggests

that the promotion and maintenance of self-determined motivation could represent another strategy to prevent waste in police departments.

Second, self-determined motivation was found to be associated negatively with perceived daily hassles. The more police officers were self-determined toward their work, the less they reported various aspects of living and of their working environment as daily hassles. This suggests that self-determined motivation may protect police officers from experiencing the negative effects of stress through its effects on the appraisal of stressors. According to Lazarus and Folkman (1984), stressors can be perceived as either challenges or threats. Lazarus and Folkman proposed that a situation is perceived as a threat only if the situation exceeds an individual's resources. Police officers who are self-determined toward work may have a greater amount of psychological resources; thus, they may encounter fewer events that tax their resources.

Self-determined motivation—that is, experiencing oneself as the source of one's actions—has been associated with feelings of interest, confidence, and freedom and with an overall better quality of experience. Thus, self-determined motivation might constitute a resource that allows police officers to work in a stressful environment while experiencing little stress at work and in life in general.

This reasoning is also in line with Skinner and Edge's (2002) motivational model of stress and coping, which posits that self-determined motivation is an asset that can shape appraisals. These authors argued that self-determined individuals are more likely to perceive an objective coercive event as a challenge rather than a threat because they have better integrated personal goals and values, which they expect others to respect. In addition, self-determined individuals may be less threatened by coercive events because they might not feel instantly obligated to act in a certain way. Instead, they may experience a choice in deciding how to respond to external pressure. Our study extends this motivational model by showing that self-determined motivation may affect not only the appraisal of universally stressful events (i.e., coercive events), but subjectively stressful events (i.e., daily hassles) as well.

Finally, the perception of daily hassles was found to be linked positively with physical symptoms. Police officers who perceived a greater degree of daily hassles also reported more physical symptoms. This is consistent with a substantial number of studies that support the role of stress in the development of physical illness. In addition, daily hassles were found to be a more reliable predictor of health status than were major life events (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Kanner, Coyne, Schaefer, & Lazarus, 1981). Indeed, individuals' interpretations of an event will determine to a great extent the impact the event will have on them. Therefore, it is important to examine further the individual differences in the interpretation of events in order to prevent the harmful effects of stress.

Impact of Supervisors' Interpersonal Behaviors on Motivation

Autonomy support was shown to be associated positively with self-determined motivation. That is, the more police officers perceived their immediate supervisor as supportive of their autonomy, the more they were self-determined at work. This finding provides support for self-determination theory in a work setting in which obedience and conformity are valued.

The responsibilities (e.g., enforcing laws), risks (e.g., legal proceedings, loss of human lives), and fear of corruption associated with policing may prompt supervisors to monitor their subordinates closely and to tell them to act and behave in a prescribed way. Despite the fact that this work context tends to favor a controlling supervision, autonomy support was nevertheless present in our sample and was associated with positive consequences. It is important to note that autonomy support does not equal a laissez-faire approach, but refers to providing structure for subordinates while at the same time encouraging choices and minimizing the use of pressure, threats, and surveillance. Thus, as is commonly believed, replacing controlling support with autonomy support does not imply loss of control over subordinates. Therefore, interventions directed toward teaching autonomy support to police supervisors could contribute to making an effective police organization by improving workers' motivation and reducing their stress and stress-related symptoms (Reeve, 1998).

Unlike autonomy support, competence support was found to be unrelated to self-determined motivation. Our analyses found that competence support was directly and positively associated with perceived daily hassles. This result is inconsistent with research inspired by self-determination theory. According to self-determination theory, interpersonal behaviors that foster perception of competence should facilitate self-determined motivation, which should lead, in turn, to desirable consequences. We failed to find the mediating role of self-determined motivation between interpersonal behaviors and consequences.

The failure to find support for the relationship between competence support and self-determined motivation may be attributable to the specific sample under study or the unique population (i.e., police officers). It is conceivable that in the police-work context, support of autonomy is so closely related to self-determined motivation that competence support failed to explain unique variance in self-determined motivation. Indeed, the role of competence support in explaining self-determined motivation might be concealed in its shared variance with autonomy support, as indicated by the substantial correlation ($r = .43$) between the two interpersonal behaviors.

A possible explanation for the positive association found between competence support and daily hassles might also concern the broad definition of competence support. Perceived competence support from supervisors refers to receiving constructive feedback, but also implies having one's mind at ease about one's

capacity and future performance at work. This definition is similar to concepts such as self-efficacy and a sense of competence or control, which are both proposed to be crucial determinants of perceived stress and coping (Bandura, 1997; Skinner, 1995). Nevertheless, our findings suggest that perceived competence support is associated with less stress. Supervisors thus should be advised to support the competence of their subordinates by promoting their feelings of confidence and effectiveness, regularly supplying information about their levels of performance, and providing opportunities to extend their capacity.

A few limitations of the study should be pointed out. First, the model was tested with mainly French Canadian male officers. Thus, cautious generalization is advised considering this restricted sample. Moreover, our response rate (35%) was not particularly high. Although the distribution observed in our demographic data (e.g., ranks, age) hints at good external validity, a replication of the present study with a more representative sample (particularly a sample composed of more women) is recommended.

Second, the statistical technique used for testing the model assumes that the variables are measured without error. It could be important for future studies to obtain a larger sample size, and then use structural equation modeling techniques that allow for multiple indicators of a construct in order to deal with the problem of measurement error associated with a single measure.

Third, the present cross-sectional study is correlational, and any causal relationships between variables should be interpreted with caution. Although solid theory and empirical support underlie the proposed relationship among the variables in the model, additional studies must be performed in order to infer causality. As a first step, the model should be replicated across independent samples. Time precedence also should be determined with a longitudinal design. If possible, intervention studies should establish perception of interpersonal behaviors (e.g., autonomy support, insufficient competence support) as a reliable predictor of motivation.

Fourth, the present study relied on self-reported measures. It would be useful for subsequent studies to incorporate objective measures into the model. For example, the number of police officers' visits to physicians or the number of sick days could be used to assess their physical health.

In conclusion, the results of the present study suggest that self-determined motivation could reduce police officers' physical symptoms through their perception of stress and increase their future work intentions. Furthermore, police officers' self-determined motivation could be maintained or increased if their immediate supervisor supports their autonomy and competence. These findings indicate that the use of choice and constructive feedback as alternatives to rewards, threats, and punishment should be favored in police organizations.

Overall, this study makes an important contribution for self-determination theory. Self-determined motivation has been associated with a wide range of

positive consequences at the cognitive, emotional, and behavioral level. However, few studies have examined self-determined motivation and health outcomes.

References

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.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238-246.

Bentler, P. M., & Wu, E. J. C. (1993). *EQS/Windows user's guide: Version 4*. Los Angeles, CA: BMDP Statistical Software.

Biggam, F. H., Power, K. G., MacDonald, R. R., Carcary, W. B., & Moodie, E. (1997). Self-perceived occupational stress and distress in a Scottish police force. *Work and Stress, 11*, 118-133.

Blais, M. R., Brière, N. M., Lachance, L., Riddle, A. S., & Vallerand, R. (1993). L'inventoire des motivations au travail de Blais [The Blais Inventory of Work Motivation]. *Revue Québécoise de Psychologie, 14*, 185-215.

Blais, M., Hess, U., Bourbonnais, J., Saintonge, J., & Riddle, A. (1995). Mens sana ad corpus sanum: Un modèle de motivation–stress–santé appliqué au couple et au travail [A motivation–stress–health model applied to relationships and work]. *Santé mentale au Québec, 2*, 139-162.

Blais, M. R., Sabourin, S., Boucher, C., & Vallerand, R. J. (1990). Toward a motivational model of couple happiness. *Journal of Personality and Social Psychology, 59*, 1021-1031.

Brown, J. M., & Campbell, E. A. (1990). Sources of occupational stress in the police. *Work and Stress, 4*, 305-318.

Brown, J. M., & Campbell, E. A. (1994). *Stress and policing: Sources and strategies*. Chichester, UK: John Wiley and Sons.

Brown, M. W., & Cudeck, R. (1989). Single sample cross-validation indices for covariance structures. *Multivariate Behavioral Research, 24,* 445-455.

Burke, R. J. (1993). Work and family stress, conflict, coping, and burnout in police officers. *Stress Medicine, 3*, 171-180.

Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows: Basic concepts, applications, and programming*. Newbury Park, CA: Sage.

Campbell, T. L. (1998). Understanding the association between self-concept, daily hassles, and depressive and anxiety symptoms among adolescents (Doctoral dissertation, University of Ottawa, 1997). *Dissertation Abstracts International: Section B: The Sciences and Engineering, 59*, 1389.

Chang, E. C. (1998). Dispositional optimism and primary and secondary appraisal of a stressor: Controlling for confounding influences and relations to coping and psychological and physical adjustment. *Journal of Personality and Social Psychology, 74*, 1109-1120.

Cooper, C. L., Kirkcaldy, B. D., & Brown, J. (1994). A model of job stress and physical health: The role of individual differences. *Personality and Individual Differences, 16*, 653-655.

Crank, J. P., & Caldero, M. (1991). The production of occupational stress in medium-sized police agencies: A survey of line officers in eight municipal departments. *Journal of Criminal Justice, 19*, 339-349.

Cullen, B. G., Link, B. G., Lawrence, F. T., & Lemming, T. (1983). Paradox in policing: A note on perception of danger. *Journal of Police Science and Administration, 11*, 457-462.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*, 105-115.

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., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality, 62*, 119-142.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York, NY: Plenum.

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research.* Rochester, NY: The University of Rochester Press.

DeLongis, A., Coyne, J. C., Dakof, G., Folkman, S., & Lazarus, R. S. (1982). Relationship of daily hassles, uplifts, and major life events to health status. *Health Psychology, 1*, 119-136.

DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology, 54*, 486-495.

Epstein, S., & Katz, L. (1992). Coping ability, stress, productive load, and symptoms. *Journal of Personality and Social Psychology, 62*, 813-825.

Gagné, M., Senécal, C. B., & Koestner, R. (1997). Proximal job characteristics, feelings of empowerment, and intrinsic motivation: A multidimensional model. *Journal of Applied Social Psychology, 27*, 1222-1240.

Gerbing, D. W., & Anderson, J. C. (1993). Monte Carlo evaluations of goodness-of-fit indices for structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 40-65). Newbury Park, CA: Sage.

Golembiewski, R. T., & Kim, B-S. (1990). Burnout in police work: Stressors, strain, and the phase model. *Police Studies: The International Review of Police Development, 13*, 74-80.

Grolnick, W. S., & Ryan, R.M. (1987). Autonomy in children's learning: An experimental and individual difference investigation. *Journal of Personality and Social Psychology, 52*, 890-898.

Gudjonsson, G. H., & Adlam, K. R. (1983). Personality patterns of British police officers. *Personality and Individual Differences, 4*, 507-512.

Kanner, A. D., Coyne, J. C., Schaefer, C., & Lazarus, R. S. (1981). Comparisons of two modes of stress measurement: Daily hassles and uplifts versus major life events. *Journal of Behavioral Medicine, 4*, 1-39.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*, 80-87.

Kroes, W. H. (1976). *Society's victim—the policeman: An analysis of job stress in policing*. Springfield, IL: Thomas.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Malloy, T. E., & Mays, G. L. (1984). The police stress hypothesis: A critical evaluation. *Criminal Justice and Behavior, 11*, 197-224.

Marmot, M., & Madge, N. (1987). An epidemiological perspective on stress and health. In S. V. Kasl & C. L. Cooper (Eds.), *Stress and health: Issues in research methodology* (pp. 3-26). Chichester, UK: John Wiley and Sons.

Mulaik, S. A., James, L. R., Van Alstein, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin, 105*, 430-445.

Mùthen, B., & Kaplan, D. (1985). A comparison of methodologies for the factor analysis of non-normal Likert variables. *British Journal of Mathematical and Statistical Psychology, 38*, 171-189.

Nelson, E. S., Karr, D. M., & Coleman, P. K. (1995). Relationships among daily hassles, optimism, and reported physical symptoms. *Journal of College Student Psychotherapy, 10*, 11-26.

Pedhazur, E. J. (1982). *Multiple regression in behavioral research: Explanation and prediction*. New York, NY: Holt, Rinehart, and Winston.

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.

Pelletier, L. G., Tuson, K. M., & Haddad, N. K. (1997). Client Motivation for Therapy Scale: A measure of intrinsic motivation, extrinsic motivation, and amotivation for therapy. *Journal of Personality Assessment, 68*, 414-435.

Pennebaker, J. W. (1982). *The psychology of physical symptoms*. New York, NY: Springer-Verlag.

Reeve, J. (1998). Autonomy support as an interpersonal motivating style: Is it teachable? *Contemporary Educational Psychology, 23*, 312-330.

Reeve, J., Jang, H., Hardre, P., & Omura, M. (2002). Providing a rationale in an autonomy-supportive way as a strategy to motivate others during an uninteresting activity. *Motivation and Emotions, 26*, 183-207.

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., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*, 749-761.

Ryan, R. M., & Frederick, C. M. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality, 65*, 529-564.

Sarrazin, P., Vallerand, R., Guillet, E., Pelletier, L., & Cury, F. (2002). Motivation and dropout in female handballers: A 21-month prospective study. *European Journal of Social Psychology, 32*, 395-418.

Séguin, C., Pelletier, L. G., & Hunsley, J. (1998). Toward a model of environmental activism. *Environment and Behaviors, 30*, 628-652.

Senécal, C., Vallerand, R. J., & Guay, F. (2001). Antecedents and outcomes of work–family conflicts: Toward a motivational model. *Personality and Social Psychology Bulletin, 27*, 176-186.

Sheldon, K. M., & Elliot, A. J. (1998). Not all personal goals are personal: Comparing autonomous and controlled reasons for goals as predictors of effort and attainment. *Personality and Social Psychology Bulletin, 24*, 546-557.

Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology, 68*, 531-543.

Skinner, E. A. (1995). *Perceived control, motivation, and coping*. Newbury Park, CA: Sage.

Skinner, E. A., & Edge, K. (2002). Self-determination, coping, and development. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 297-337). Rochester, NY: University of Rochester Press.

Stansfield, R. T. (1996). *Issues in policing: A Canadian perspective*. Toronto, Ontario, Canada: Thompson Educational Publishing, Inc.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*, 173-180.

Tang, T. L., & Hammontree, M. L. (1992). The effects of hardiness, police stress, and life stress on police officers' illness and absenteeism. *Public Personnel Management, 21*, 493-510.

Toch, H. (2002). *Stress in policing*. Washington, DC: American Psychological Association.

Vallerand, R. J., Fortier, M. S., & Guay, F. (1997). Self-determination and persistence in a real-life setting: Toward a motivational model of high school dropout. *Journal of Personality and Social Psychology, 72*, 1161-1176.

Vallerand, R. J., & Reid, G. (1988). On the relative effects of positive and negative verbal feedback on males' and females' intrinsic motivation. *Canadian Journal of Behavioural Science, 20*, 239-250.

Violanti, J. M., Vena, J. E., & Marshall, J. R. (1986). Disease risk and mortality among police officers: New evidence and contributing factors. *Journal of Police Science and Administration, 14*, 17-23.

Williams, G. C., Gagné, M., Ryan, R. M., & Deci, E. L. (2002). Facilitating autonomous motivation for smoking cessation. *Health Psychology, 21*, 40-50.