Probing into commitment’s nonlinear relationships to work outcomes

Alexandre J.S. Morin
Centre for Positive Psychology and Education, University of Western Sydney, Sydney, Australia and Department of Psychology, University of Sherbrooke, Sherbrooke, Canada

Christian Vandenberghe
Management Department, HEC Montréal, Montreal, Canada

Marie-Josée Turmel
Department of Humanities, CEGEP of Granby Haute-Yamaska, Granby, Canada

Isabelle Madore
Human and Financial Resources Management Service, University of Sherbrooke, Sherbrooke, Canada, and

Christophe Maïano
Cyberpsychology Laboratory, Department of Psychoeducation and Psychology, Université du Québec en Outaouais (UQO), Saint-Jérôme, Canada

Abstract
Purpose – The purpose of this paper is to investigate the possibility of curvilinear patterns of relationships between workplace affective commitment and in-role performance, organizational citizenship behaviors and burnout. As most commitment theories assume strictly linear relations with these outcomes, demonstrating that these positive associations do not hold above some ceiling point in the commitment continuum is potentially important for research and practice.

Design/methodology/approach – The possibility of nonlinear relations was examined in a sample of 273 hospital employees.

Findings – The results yielded strong support for the authors’ hypotheses. Indeed, most of the relations observed (ten of 15) between affective commitment foci and work outcomes were curvilinear, revealing a ceiling to the positive association between commitment and outcomes. Although these results vary in strength across work outcomes and commitment targets, they reveal that affective commitment has negative associations with employee productivity and psychological health at extreme levels.

Originality/value – Methodologically, these results illustrate the need to systematically explore the true nature of relations among constructs, even in areas where it is assumed to be well known. Practically, these results suggest that, ultimately, moderate levels of commitment may be more beneficial than extremely high levels.

Keywords Employees behaviour, Job commitment, Stress, Workplace affective commitment, Organizational citizenship behavior, In-role performance, Burnout, Curvilinear relations, Ceiling

Paper type Research paper
Modern organizations face increasingly competitive markets and expect employees to fulfill their job descriptions while exceeding productivity standards. This context led scholars to distinguish in-role performance from organizational citizenship behaviors (OCBs; e.g. Williams and Anderson, 1991). In-role performance encompasses activities falling within employees’ formal job descriptions, whereas OCB are “discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promote the effective functioning of the organization” (Organ, 1988, p. 4). Although various attitudes have been examined as potential antecedents of in-role performance and OCB, organizational commitment has emerged as central (Meyer et al., 2002; Podsakoff et al., 2000).

Organizational commitment refers to employees’ involvement in and identification with an organization (Meyer and Allen, 1991). Meyer and Herscovitch (2001) propose a broad definition of commitment as a “force that binds an individual to a course of action of relevance to one or more targets” (p. 299), therefore defining commitment as a positive driver of behavior. This definition implicitly assumes that commitment is multifocal, i.e. directed toward various constituencies within the organization, in addition to the organization itself (Becker, 1992; Cohen, 2003; Morrow, 1993; Reichers, 1985). Indeed, organizations include multiple social constituencies whose goals and values may conflict (Reichers, 1985) and to which employees may be differentially committed. For instance, Becker (1992) found that commitments to top management, supervisors, and workgroups contributed unique variance in turnover intentions, job satisfaction and OCBs. Other studies reported evidence for a unique contribution of commitment to the supervisor to in-role performance and OCBs (Becker and Kernan, 2003; Becker et al., 1996; Cheng et al., 2003; Gregersen, 1993; Siders et al., 2001; Snape et al., 2006; Vandenberghe et al., 2004). Similarly, commitment to the workgroup has been found to uniquely relate to job performance and OCBs (Bentein et al., 2002; Bishop et al., 2000; Ellemers et al., 1998), whereas commitment to customers was demonstrated to relate to customer-relevant performance (Siders et al., 2001; Vandenberghe et al., 2007). Interestingly, many of these studies found that the contribution of organizational commitment dropped to non-significance once other foci were considered. Unfortunately, few studies considered more than two or three foci at a time (Morin et al., 2011b; Stinglhamber et al., 2002), albeit these studies also confirmed the added value of a multifocal perspective.

Social exchange theory (Blau, 1964) has been used as the conceptual underpinning of the positive relations between affective commitment and OCBs. In essence, employees who feel they are in a trustful relationship with an entity are thought to experience stronger commitment to this entity (e.g. Rousseau, 1995). Following this logic, strongly committed employees would naturally want to reciprocate by adopting behaviors that benefit this entity or more generally the organization (Coyle-Shapiro et al., 2004; Konovsky and Pugh, 1994).

Although various bases of commitment have been proposed (Meyer and Herscovitch, 2001), we focus on affective commitment, given that it is the most widely studied, the most generalizable across foci and the most strongly associated with behaviors (e.g. Solinger et al., 2008). In particular, affective organizational commitment has been found to relate positively to in-role performance and OCBs (Meyer et al., 2002). Yet, the relation with the latter is reported to be stronger (Riketta, 2002) because OCBs are left to the employee’s discretion, enabling commitment to play a stronger role.
Is there a ceiling to the benefits of affective commitment?
The theoretical underpinnings of most commitment studies implicitly assume that an increase in affective commitment is always associated with a beneficial return (e.g. more performance, less burnout). Very few researchers allude to potentially deleterious consequences of elevated levels of affective commitment (for a review, see Meyer and Maltin, 2010). Among the exceptions, Reichers (1985) suggests that commitments to multiple foci may sometimes conflict. For instance, workgroups are cohesive entities whose goals and values may conflict with those of the organization or supervisors and may have to compete with them to fulfill their work-related needs. However, negative consequences are assumed to be related to conflicts among commitments rather than from the commitments themselves. Randall (1987) explicitly suggested that extreme commitment may limit employees’ creativity by pushing them to follow organizational rules blindly. Such employees would then remain productive but may come to neglect their own needs. More indirectly, Mathieu and Zajac (1990) and Reilly (1994) used identity theory (Burke, 1991) to propose that high commitment is incorporated in workers’ identities and may be associated with exacerbation of the deleterious effects of stressors when these stressors threaten the successful accomplishment of role-related tasks.

Finally, outside mainstream research on organizational commitment, Siegrist (1996, Siegrist et al., 2004) proposed the effort-reward imbalance model as a framework to explain some negative consequences of workplace experiences on employees’ physical health. This model is related to social exchange theory and proposes that occupational strain results from a lack of reciprocity between employees’ investments at work and the benefits received in return. Siegrist et al. (2004) proposed the construct of “overcommitment” as a core moderator of the relations between effort-reward imbalance and employees’ health, stating that overcommitted workers tend to invest their work to a level that the organization cannot reciprocate. Although “overcommitment” is assessed by items related more to the interference of work with personal life rather than to affective commitment, this model provides arguments for expecting negative consequences to be associated with elevated levels of commitment (Lehr et al., 2010; Preckel et al., 2007; Rennesund and Saksvik, 2010). Following Siegrist’s work, it is plausible that extreme levels of commitment could be associated with reduced performance, OCB and health outcomes because the efforts they involve cannot be reciprocated by the organization, thus leading to a drain of the employee’s resources (Hobfoll, 2002).

Moreover, the paradox of affective commitment is that it is known to predict higher levels of performance. However, high levels of performance require the investment of significant personal resources, therefore increasing the likelihood of resource drain and burnout, in turn leading to reduced work productivity (Fogarty et al., 2000). This is consistent with the well-documented positive relation between workload and burnout (Maslach et al., 2001). In other words, affective commitment is a positive energizing force, highly committed employees are purported to be more productive, happy and involved in positive social exchanges. In turn, the significant investments associated with affective commitment may result in heavier workloads, which may lead to burnout. This suggests that high levels of commitment could end up being deleterious for mental health and productivity. In support of this view, it has been found that newcomers who initially experience high levels of affective commitment to the organization are more likely to find themselves with higher role overload in the first year of employment (Vandenberghe et al., 2011).
Unfortunately, the few studies that have investigated the relations between affective commitment and burnout (or related constructs) have yielded contradictory findings. Moreover, they have rarely considered commitment to multiple foci. In their review of this literature, Meyer and Maltin (2010) concluded that affective commitment is associated with lower levels of psychological health problems. In fact, only two studies have yielded divergent results. One found that job involvement (i.e., a construct close to affective commitment in relation to one's tasks) was associated with higher levels of job-related tension when organizational commitment was simultaneously considered (Cohen, 1998). Similarly, Reilly and Orsak (1991) noted positive relations between burnout and commitment to the professional group. This suggests that a multi-focus approach could bring a different perspective to these results. Indeed, few studies considered commitments to social targets other than the organization.

Some studies also considered the possibility that employees’ levels of commitment could moderate, as either a protective or an exacerbating factor, the relations between work stress and burnout. These studies yielded divergent results. Some found evidence that higher levels of affective commitment to the organization were associated with a less pronounced relation between work stress and burnout, suggesting a protective role of commitment (Begley and Czajka, 1993; Glaser and Kruse, 2008; Hochwater et al., 1999; Schmidt, 2007). Conversely, other studies found that among employees with high levels of commitment to the professional group (Reilly, 1994), the organization (Irving and Coleman, 2003), or the client organization (Galais and Moser, 2009), work stress was more strongly related to negative outcomes, suggesting an exacerbating role of commitment. Once again, these results underline the value of endorsing a multi-focus perspective on affective commitment.

Statistical assumptions, paradigmatic shifts and dust-bowl empiricism

These apparently paradoxical observations could have a simple explanation: the benefits of affective commitment for productivity and well-being could have a ceiling. In other words, higher levels of commitment may be associated with positive outcomes up to a certain point. After reaching this “ceiling” point, the relation may shift such that more extreme levels of commitment becomes associated with less positive outcomes. Statistically, this ceiling is best represented as an inverted U-shaped curvilinear relation between commitment and positive outcomes.

Meyer and Maltin (2010, p. 324) implicitly argued against this possibility by concluding “We found no evidence to suggest that strong affective commitment to the organization had detrimental implications for well-being. Thus, the bulk of evidence suggests that having a strong affective commitment to one’s organization might have positive health benefits”. However, before drawing such a conclusion, one should ascertain that the relations do not change according to the level of commitment, i.e., that the relations are fully linear. In practice, this assumption is tested through the verification of potential nonlinearity in the relations. Few studies have investigated nonlinear relations between affective commitment and work outcomes, and most of them studied commitment to the organization only (Addae and Wang, 2006; Luchak and Gellatly, 2007; Somers, 1999; Somers and Casal, 2009). Two of them failed to find evidence of nonlinearity in relation to performance, turnover intentions or absenteeism (Luchak and Gellatly, 2007; Somers and Casal, 2009); one found nonlinearity in the three-way relation between turnover, job satisfaction and affective organizational...
commitment (Somers, 1999); and one (Addae and Wang, 2006) found curvilinear relations between anxiety and job involvement. Only one of these studies (Addae and Wang, 2006), reporting nonlinear relations, is included in Meyer and Maltin’s (2010) review, which does not discuss these results.

One reason why so few studies looked at nonlinearity in the relation between affective commitment and work outcomes is that this possibility is not incorporated, and is even implicitly discarded, in current theoretical perspectives on commitment. Therefore, scholars may end up believing that investigating nonlinearity will result in “dust-bowl empiricism” and post hoc explanations, practices that are discouraged in modern organizational research. However, Kuhn (1962) noted that paradigmatic revolutions often come from paradoxical results, such as those previously described, that dominant theories cannot explain. Clearly, observing such discrepancies, especially when no theoretical proposition can explain them, should be sufficient justification for further investigation (Miller, 2007; Rozeboom, 2008; Starbuck, 2006). Interestingly, recent calls for studies designed to probe systematically into the implicit assumptions underlying dominant management theories have been made in flagship management journals (Gray and Cooper, 2010; Hambrick, 2007; Suddaby et al., 2011; Walsh, 2011). In fact, even when clear linear relations are expected, best practice suggests that hypotheses should be systematically contrasted with alternative hypotheses. Furthermore, linearity is an assumption of most statistical models. As such, no paradox or theoretical expectations are even needed to investigate nonlinearity: this verification should be done routinely prior to any analysis (Bettis and Prahalad, 1995; Edwards, 1994; Marsh et al., 2012; Somers, 2001).

The purpose of this study is to examine potential nonlinear relations between affective commitment to the most relevant social foci in workplaces (organization, supervisor, coworkers, and customers) (Becker, 2009) and five work outcomes (in-role performance, OCB, emotional exhaustion, cynicism and professional efficacy). Although theoretical work on this issue is scarce, there is indirect evidence from Siegrist et al.’s (2004) effort-reward imbalance model and research on the relations between commitment and role overload over time (Vandenberghhe et al., 2011) that the relations between commitment and these outcomes will be characterized by a ceiling. Based on the previous literature review, we propose the following hypotheses:

\[ H1. \] The linear relationships of affective commitments to social foci with in-role performance \((H1a)\), OCB \((H1b)\), and professional efficacy \((H1c)\) will be positive.

\[ H2. \] The linear relationships of affective commitments to social foci with emotional exhaustion \((H2a)\) and cynicism \((H2b)\) will be negative.

\[ H3. \] In models allowing for nonlinearity, the associations of affective commitment to social foci with in-role performance \((H3a)\), OCB \((H3b)\), and professional efficacy \((H3c)\) will be better represented by an inverted-U-shaped relation.

\[ H4. \] In models allowing for nonlinearity, the associations of affective commitment to social foci with emotional exhaustion \((H4a)\) and cynicism \((H4b)\) will be better represented by a U-shaped relation.
Method
Sample and procedure
This study targeted all 112 nurses, 93 nursing aids and 387 patient service associates active on the employee lists of the long-term health-care center of a public institution in the Eastern Townships in Quebec, Canada. Questionnaires, consent forms and return envelopes were distributed directly to the employees by a member of the research team, who also answered participants’ questions. A total of 57 nurses, 47 nursing aids and 151 patient service associates \( (n = 255; \) 44 percent) returned usable questionnaires. Among respondents, 22.8 percent were males; 47.0 percent were full-time employees; 10.8 percent were aged under 30, 50.2 percent were aged between 30 and 50, and 39.0 percent were aged over 50; 24.0 percent had less than five years of tenure, 20.1 percent had 5-10 years of tenure, 24.8 percent had between 10 and 20 years of tenure, and 31.1 percent had more than 20 years of tenure; 20.6 percent had a general high school degree or less, 34.4 percent had a professional high school degree, 24.5 percent had a college degree, and 20.6 percent had a university degree. Family income was distributed as follows: 24.5 percent had less than 30,000$, 25.7 percent had between 30,000$ and 40,000$, 22.2 percent had between 40,000$ and 60,000$, and 27.7 percent had over 60,000$.

Measures
In-role performance and OCBs. The Behavioral Empowerment Questionnaire (BEQ; Boudrias and Savoie, 2006) was used to evaluate employees’ in-role performance (seven items, e.g. “Carry out the tasks related to my job conscientiously”) and OCBs (21 items, e.g. “Participate in solving problems in the organization”). The items are rated on a five-point frequency scale assessing how often the employee displayed the described behaviors within the last six months.

Burnout. Burnout was measured with the French adapted version of the MBI-GS (Maslach Burnout Inventory General-Survey; Dubreuil et al., 2009; Schaufeli et al., 1996). The MBI-GS evaluates three dimensions of burnout:

1. Emotional exhaustion (five items; e.g. “I feel emotionally drained from my work”);
2. Cynicism (five items; e.g. “I just want to do my job and not be bothered”); and
3. Professional efficacy (six items; e.g. “I can effectively solve the problems that arise in my work”; low levels on this scale indicate burnout).

The items are rated on a seven-point frequency scale assessing how often the employee exhibits these symptoms.

Workplace affective commitment (WAC). Commitment was assessed with three items per focus from the short form of Morin et al.’s (2009) workplace affective commitment questionnaire: organization (e.g. “I am proud to say that I work for this organization”), supervisor (e.g. “I feel proud to work with my current supervisor”), coworkers (e.g. “My coworkers make me feel like going to work”), and customers (e.g. “In my opinion, the satisfaction of [name of the organization] customers is a priority”). Following Morin et al. (2009), items were rated on a three-category answer scale reflecting low, moderate and high levels of commitment.

Analyses
Preliminary analyses. Confirmatory factor analyses conducted with Mplus 6.1 diagonally weighted least square estimator (WLSMV; Muthén and Muthén, 2010),...
which has been found to outperform maximum likelihood estimation with five or less answer categories (Beauducel and Herzberg, 2006; Flora and Curran, 2004; Lubke and Muthén, 2004), supported the a priori nine-factor model of all study variables ($\chi^2 = 2,371.45$ (1,443), $p < 0.01$, CFI = 0.91, TLI = 0.91, RMSEA = 0.05).

All constructs were assessed from self-reports, suggesting that shared method variance may affect the results. However, self-reports have been identified as the most adequate source of information regarding emotional states, such as commitment and burnout, and hard-to-observe behaviors, such as OCBs (Ilies et al., 2009; Vandenberg et al., 2004). Predictors were separated from outcomes in the survey, participants were ensured confidentiality, and surveys were returned sealed directly to the research team. These represent initial steps to reduce shared method variance. To verify whether these procedures successfully reduced shared method variance, we re-estimated the CFA model including an additional orthogonal latent method factor related to all items. This model ($\chi^2 = 1,832.21$ (1,387), $p < 0.01$, CFI = 0.96, TLI = 0.95, RMSEA = 0.04) showed that the method factor only accounted for 17 percent of the total variance, which is close to the 11-25 percent reported as being characteristic of linear models not biased by method variance. The correlations among latent variables also remained unchanged whether the method factor was included or not (mean difference in these correlations = 0.088).

Furthermore, it has been noted that the impact of shared method variance has been overstated (Conway and Lance, 2010; Spector and Brannick, 2010), particularly in multivariate analyses and tests of curvilinearity as conducted in the present study. Siemsen et al. (2010) provide an extensive equation-based demonstration showing that multivariate analyses including multiple predictors assessed with the same method include a natural control for shared method variance given that multivariate effects are estimated from each predictor’s unique (i.e. not shared) contribution. They also show that shared method variance cannot falsely create curvilinear relations, but that even low levels of shared method variance can attenuate them significantly, making them harder to detect (Siemsen et al., 2010), providing a natural control for Type 1 error rate inflation when analyses are multiplied. Given this evidence, we elected not to further control for potential Type 1 error rate inflation resulting from conducting multiple curvilinear analyses in relation to the five outcomes. Indeed, there is an inverted relation between power and Type 1 error. Thus, to maintain the power to detect potentially deflated curvilinear effects (hence to avoid inflation in Type 2 error rates) we tolerated slightly inflated Type 1 error rates. In other words, the presence of some method variance provided a natural adjustment for the potential inflation in Type 1 error rates, allowing us not to further control for Type 1 error rates, and in turn to maintain the proper levels of power.

In Table I, scale score reliability coefficients are reported based on both Cronbach’s $\alpha$ and McDonald’s (1970) $\omega$, computed as:

$$\omega = (\sum |\lambda_i|^2)/((\sum |\lambda_i|^2 + \sum \delta_i)),$$

where $\lambda_i$ are the factor loadings and $\delta_i$ are the error variances. Compared with $\alpha$ (Sijtsma, 2009), $\omega$ takes into account the strength of association between items and constructs (loadings) as well as item-specific measurement errors.
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<tr>
<td><strong>1. WAC-Organization</strong></td>
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<td><strong>2. WAC-Supervisor</strong></td>
<td>0.42***</td>
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<td><strong>3. WAC-Coworkers</strong></td>
<td>0.32***</td>
<td>0.34***</td>
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<td><strong>4. WAC-Customers</strong></td>
<td>0.36***</td>
<td>0.22***</td>
<td>0.20***</td>
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<td><strong>5. In-role performance</strong></td>
<td>0.22***</td>
<td>0.12</td>
<td>0.05</td>
<td>0.32***</td>
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<td><strong>6. OCB</strong></td>
<td>0.24***</td>
<td>0.16*</td>
<td>0.11</td>
<td>0.24***</td>
<td>0.42**</td>
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<tr>
<td><strong>7. Emotional exhaustion</strong></td>
<td>-0.22***</td>
<td>-0.23***</td>
<td>-0.28***</td>
<td>-0.16*</td>
<td>-0.16*</td>
<td>0.16*</td>
<td></td>
<td>-0.06</td>
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<tr>
<td><strong>8. Cynicism</strong></td>
<td>-0.46***</td>
<td>-0.26***</td>
<td>-0.34***</td>
<td>-0.31***</td>
<td>-0.20**</td>
<td>-0.21**</td>
<td>0.52**</td>
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<tr>
<td><strong>9. Professional efficacy</strong></td>
<td>0.35***</td>
<td>0.17***</td>
<td>0.14*</td>
<td>0.31***</td>
<td>0.35**</td>
<td>0.31**</td>
<td>-0.19**</td>
<td>-0.35**</td>
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<tr>
<td><strong>Mean</strong></td>
<td>2.17</td>
<td>2.05</td>
<td>2.24</td>
<td>2.75</td>
<td>4.57</td>
<td>3.28</td>
<td>2.52</td>
<td>4.69</td>
<td>1.39</td>
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<tr>
<td><strong>Standard deviation</strong></td>
<td>0.60</td>
<td>0.67</td>
<td>0.63</td>
<td>0.39</td>
<td>0.68</td>
<td>0.69</td>
<td>1.54</td>
<td>0.99</td>
<td>1.39</td>
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<tr>
<td><strong>Range</strong></td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.5</td>
<td>1.23</td>
<td>4.82</td>
<td>0.6</td>
<td>0.33</td>
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<tr>
<td><strong>Skewness</strong></td>
<td>-0.42</td>
<td>-0.05</td>
<td>-0.44</td>
<td>-1.58</td>
<td>-2.92</td>
<td>0.30</td>
<td>0.38</td>
<td>-1.04</td>
<td>1.22</td>
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<tr>
<td><strong>Kurtosis</strong></td>
<td>-0.93</td>
<td>-1.17</td>
<td>-0.82</td>
<td>2.16</td>
<td>10.62</td>
<td>-0.09</td>
<td>-0.92</td>
<td>1.54</td>
<td>1.04</td>
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<tr>
<td><strong>Reliability (α)</strong></td>
<td>0.73</td>
<td>0.84</td>
<td>0.87</td>
<td>0.70</td>
<td>0.94</td>
<td>0.91</td>
<td>0.90</td>
<td>0.80</td>
<td>0.64</td>
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<tr>
<td><strong>Reliability (ω)</strong></td>
<td>0.86</td>
<td>0.91</td>
<td>0.94</td>
<td>0.85</td>
<td>0.97</td>
<td>0.84</td>
<td>0.92</td>
<td>0.87</td>
<td>0.79</td>
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**Notes:** WAC, workplace affective commitment; OCB, organizational citizenship behaviors; *p < 0.05 (two-tailed); **p < 0.01 (two-tailed)
Analytical strategy. Descriptive statistics and correlations are reported in Table I. To investigate the nature of the relations between the four foci of commitment and the five outcomes, we followed a sequential strategy. First, the linear relations between commitment to each focus and one outcome were tested using separate linear regression analyses. Second, all commitment foci identified as significant in the preceding step were simultaneously included in a multiple linear regression to determine the strongest associations. Third, curvilinear terms (formed by squaring the predictor; see Cohen and Cohen, 1983) were added to a multiple regression model including all predictors identified as significant in the second step. In these models, the curvilinear relation between each predictor and outcome was tested separately to limit the number of predictors simultaneously considered, thus maximizing statistical power (see previous discussion) and limiting non-necessary multicollinearity. In these analyses, the linear component of the squared variable was always included, notwithstanding the results from the second step, since these are needed to fully describe quadratic relations. These steps were repeated for each outcome and the results are reported in Table II. To avoid multicollinearity problems related to the inclusion of variables and their higher-order polynomials in the same models, variables were standardized prior to the analyses (Aiken and West, 1991; Le et al., 2011).

Most of the variables (see Table I) were reasonably normally distributed, with skewness and kurtosis values remaining near or under 1, except for affective commitment to customers and in-role performance. As pointed out by Le et al. (2011), illusions of nonlinearity may be created by non-normality (skewness) or lack of variability. To investigate this possibility, we followed Le et al.'s (2011) recommendation and computed correlations between the predictors and outcomes separately before and after the turning point (TP) of the curvilinear relations (i.e. the point where the sign of the relation changes, that is the bottom of the U for U-shaped relations). If these correlations change sign before and after the TP (or reach 0 at the turning point when it corresponds to the minimum or maximum of the scale), the results are unlikely to be due to the distribution of the variables (Le et al., 2011). This was generally the case for the curvilinear relations reported in this study. It should be noted that these correlations have no substantive meaning, but are only safeguards against erroneous conclusions of nonlinearity. TPs are calculated using the quadratic equation \( y = a + b_1X + b_2X^2 \) as \(-b_1/2b_2\) (Cohen and Cohen, 1983).

Results

In-role performance

Separately, commitment to the organization and customers both positively relate to in-role performance. However, when they are entered together in a multiple regression, only commitment to customers still significantly relates to in-role performance. This linear model explains 12 percent of the variance \((R^2)\) of in-role performance. Curvilinear relations were also observed between three commitment foci, including the organization and the customers, and in-role performance:

1. organization \((y = 4.71 + 0.02X - 0.14X^2; \text{ TP: } 0.06)\);
2. coworkers \((y = 4.65 - 0.05X - 0.09X^2; \text{ TP: } -0.28)\); and
3. customers \((y = 4.64 + 0.10X - 0.08X^2; \text{ TP: } 0.64)\).
### Table II: Commitment’s regression analyses

<table>
<thead>
<tr>
<th>WAC loci</th>
<th>Simple linear regressions</th>
<th>Multiple linear regression</th>
<th>Curvilinear regressions*</th>
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<tbody>
<tr>
<td></td>
<td>$R$</td>
<td>(95 percent CI)</td>
<td>$t$</td>
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<tr>
<td><strong>Outcome: IRP</strong></td>
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<tr>
<td>Supervisor</td>
<td>0.15</td>
<td>(0.076 to 0.23)</td>
<td>3.54 **</td>
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<tr>
<td>Coworkers</td>
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**Notes:** *For significant curvilinear relations, the complete regression equation and turning points will be reported in text. We also probed whether cubic, quartic or exponential relations could add to the models and found no support for these additional relations.*

**WAC**, workplace affective commitment; **IRP**, in-role performance; **OCB**, organizational citizenship behaviors; **EE**, emotional exhaustion; **C**, cynicism; **PE**, professional efficacy; –, only the significant predictors from univariate linear models were included in the multivariate model; $R$, unstandardized regression coefficient; $R^2$, proportion of explained variance in the model; $\Delta R^2$, proportion of explained variance in the model improvements ($Q$) in this indicator from the previous model; $p < 0.01$ (two-tailed).
These relations, illustrated in Figure 1, add 4 percent, 2 percent and 2 percent, respectively, of variance explained ($\Delta R^2$) to the preceding model, or 6 percent when entered together. These results show that, as levels of commitment to the organization and coworkers rise approximately to an average level, so do employees’ levels of in-role performance. Then, as commitment to these foci becomes more extreme, in-role performance starts decreasing to a level similar to that of uncommitted employees. Conversely, the relation between affective commitment to customers and in-role performance appears stronger at lower levels of commitment and flattens out when commitment reaches the maximum of the scale.

**OCBs**
Separately, three commitment foci positively relate to OCBs:

1. organization;
2. supervisors; and
3. customers.

However, when entered together in a multiple regression, only commitment to the organization and customers remain significantly associated with OCBs, explaining 9 percent of their variance. None of the nonlinear relations proved significant, indicating fully positive relations between affective commitment and OCBs.

**Emotional exhaustion**
Separately, all commitment foci negatively relate to emotional exhaustion. However, when considered together, only commitment to coworkers still significantly relates to emotional exhaustion and explains 11 percent of its variance. As for OCBs, no curvilinear relation proved significant.
Cynicism
Separately, all commitment foci negatively relate to cynicism. When entered together in a multiple regression, only commitment to the organization, coworkers and customers remained significantly associated to cynicism, explaining 27 percent of its variance. However, two of these relations are in fact curvilinear, involving commitment to the organization \( (y = 1.23 - 0.39X + 0.16X^2; \ TP: 1.25) \) and customers \( (y = 1.25 + 0.02X + 0.14X^2; \ TP: -0.08) \). These relations respectively add 1 percent and 2 percent of explained variance to the model, or 3 percent when entered together (see Figure 2). These results show that, as levels of commitment to these foci rise to a point 1.25 SD over the average for organization, and close to the average for customers, levels of cynicism tend to decrease. Then, as commitment to customers becomes more extreme, cynicism starts increasing again. However, when commitment to the organization starts increasing above the TP, the level of cynicism tends to flatten out.

Professional efficacy
Separately, all commitment foci negatively relate to professional efficacy. However, when considered together, only commitment to the organization and to customers remained significantly related to professional efficacy, explaining 17 percent of its variance. However, curvilinear relations were observed between professional efficacy and commitment to the organization \( (y = 4.85 + 0.20X - 0.17X^2; \ TP: 0.60) \), coworkers \( (y = 4.80 - 0.04X - 0.116X^2; \ TP: -0.17) \), and customers \( (y = 4.78 + 0.07X - 0.09X^2; \ TP: 0.35) \). These relations add 3 percent, 1 percent, and 2 percent, respectively, of explained variance to the preceding model, or 5 percent when entered together (see Figure 3). These results show that, as levels of commitment to these foci rise to a point near the average, professional efficacy tends to increase. Then, as commitment becomes more extreme, professional efficacy starts decreasing.

To summarize, \( H1 \) predicted positive and linear relations between commitments to social foci and in-role performance \( (H1a) \), OCB \( (H1b) \), and professional efficacy \( (H1c) \), and \( H2 \) stated that commitments to social foci would relate negatively and linearly to emotional exhaustion \( (H2a) \) and cynicism \( (H2b) \). These hypotheses are partly

Figure 2. Nonlinear relations between workplace affective commitment and cynicism
H3, which predicted inverted U-shaped relations between commitments to social foci and in-role (H3a) performance, OCB (H3b), and professional efficacy (H3c), is largely supported for in-role performance (H3a) and professional efficacy (H3c) but not supported for OCB (H3b). Finally, H4, which proposed U-shaped relations between commitments to social foci and emotional exhaustion (H4a) and cynicism (H4b), is only partly supported in the case of cynicism (H4b). H4a is not supported, as no such relationship occurred for emotional exhaustion.

Discussion
This study postulated that the relations between the main social foci of affective commitment and work outcomes would be better represented by curvilinear relations. Consistent with this proposition, findings reveal that most of the observed significant relations (eight of 12 observed relations) between commitment foci and work outcomes were curvilinear, revealing a ceiling to the benefits of commitment. For at least two outcomes, curvilinear relations explained one half (adding 6 percent to 12 percent to in-role performance) to one third (adding 5 percent to 17 percent to professional efficacy) more variance in the predicted outcome. It is also worth noting that curvilinear relations concentrate on three outcomes, with eight out of nine of the relations observed between commitments and in-role performance, cynicism, and professional efficacy being curvilinear, versus none (out of three) for OCBs or emotional exhaustion. Although these results vary according to specific outcomes and commitment foci, they reveal that higher levels of affective commitment are associated with lower levels of productivity and psychological health, sometimes at extreme levels, but very often starting from average levels of commitment.

Three specific results deserve additional attention. First, employees’ affective commitment to their customers was significantly and meaningfully related to many of the outcomes considered in this study, showing linear relations with OCBs and curvilinear relations with in-role performance, cynicism, and professional efficacy. As this sample

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**Figure 3.** Nonlinear relations between workplace affective commitment and professional efficacy

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Three specific results deserve additional attention. First, employees’ affective commitment to their customers was significantly and meaningfully related to many of the outcomes considered in this study, showing linear relations with OCBs and curvilinear relations with in-role performance, cynicism, and professional efficacy. As this sample
comprises health-care employees whose jobs are centered on building long-term health-care relations with highly disadvantaged patients (i.e. the customers), this result is not surprising. Given the lack of resources characteristic of the Canadian health care system (e.g. budget reductions, population aging, mandatory overtime), these results suggest that employees who are highly committed to patients may try to compensate for this lack of resources through actions designed to improve organizational functioning (OCBs), while at the same becoming more cynical and less efficient in meeting daily expectations of their main tasks due to their greater investments at extra-role behaviors.

Indeed, extreme commitment to customers may not provide a buffer against increases in cynicism and impressions of becoming less efficient in one’s main job, themselves due to a lack of resources. These interpretations are consistent with Adams’s (1963, 1965) equity theory and Siegrist et al.’s (2004) effort-reward imbalance model, which both propose that employees assess their contribution to the organization in terms of cost/benefit ratios and feel that equity exists when these ratios are similar across employees or over time. The current lack of resources, coupled with the increased need for long-term health care due to population aging, may create feelings of inequity in employees who now need to work harder to achieve similar results. Employees with extreme commitment to patients may thus attempt to re-establish equity without penalizing patients. They may do so by decreasing their performance while simultaneously increasing OCBs, thus becoming potentially more cynical than what might otherwise be expected from their levels of commitment. This, however, is not the case for moderately committed employees who may not feel as strongly responsible for patients’ well-being and may simply perform their best without attempting to over-compensate for systemic problems.

Second, commitment to the organization shows a similar pattern of results. Indeed, employees with extreme levels of affective commitment to their organization also tend to present reduced levels of in-role performance and feelings of professional efficacy and higher levels of cynicism, while still presenting higher levels of OCBs. Employees who are highly committed to their organization might perceive the previously described lack of resources as a violation of their psychological contract with their employer (Rousseau, 1995), i.e. a rupture of the equilibrium characterizing their relationship with the organization. In return, they may try to get even by decreasing their in-role performance and thus start to feel less efficient and more cynical. Although this interpretation is apparently paradoxical given that these employees are extremely committed to their organization, it should be noted that these employees still maintain high levels of behaviors (OCBs) designed to help their organization through these tough times. This should also be put into perspective: the Canadian health care system is public. Therefore, employees may remain highly committed to their local organization, yet may feel that their employer – the government – is violating their psychological contract.

Third, employees’ commitment to coworkers also presented significant and meaningful relations to various outcomes considered in this study, including linear relations with emotional exhaustion and cynicism, and curvilinear relations with in-role performance and professional efficacy. These results are consistent with classical results showing that group members often match their performance to less efficient members to avoid unduly pressuring coworkers (Roethlisberger and Dickson, 1967; Steiner, 1972). Clearly, this presupposes a high level of group cohesion. Interestingly, for individual workers, group cohesion is reflected by affective commitment to coworkers.
Consequently, employees who are highly committed to coworkers may end up decreasing their in-role performance, to maximize group cohesion, social support and pleasant relations with coworkers, and thus end up feeling less efficient professionally. Interestingly, cohesion, social support and positive relations are well-documented protective factors against burnout (e.g. Dierendonck et al., 1998). This may explain the negative linear relations observed between employees’ commitment to coworkers and the cynicism and emotional exhaustion components of burnout. The fact that extreme levels of commitment to coworkers are related to decreases in work performance and professional efficacy can be explained within a multi-focus perspective on commitment. Indeed, employees are very seldom committed to a single focus (Morin et al., 2011a) and may thus share commitment to additional foci with their coworkers. Thus, moderate commitment to coworkers could be more adaptive and associated with group-based collaboration toward achieving organizational goals, whereas extreme commitment could be less adaptive and associated with team collusion where the preservation of group members becomes the dominant driver of behaviors.

Theoretical implications and future research

Our interpretation of the curvilinear relationships of commitment to work outcomes needs further testing as research and theories on this issue are scarce. We addressed this question based essentially on prior work regarding reward-effort imbalance (Siegrist, 1996; Siegrist et al., 2004) whereby commitment is thought to produce beneficial effects on performance and health up to a certain point. After that turning point, increased levels of commitment are likely detrimental, essentially because the organization can no longer reciprocate through appropriate rewards. However, this approach needs further exploration. For example, future research should investigate whether resource drain (Hobfoll, 2002) or lack of reciprocity (Siegrist, 1996) are the true mechanisms behind the curvilinear relations observed in this study. Through these results, we hope to encourage the development of stronger theoretical bases, providing future research with more specific a priori hypotheses. Siegrist’s model (Siegrist, 1996, Siegrist et al., 2004), which posits that “overcommitment” moderates the effects of effort-reward imbalances on health outcomes, could assist in this task. Similarly, initial investigations of the subjective meaning of these relationships would likely be substantially enriched by an in-depth qualitative study based on interviews of highly committed participants presenting low performance levels and high burnout levels.

Future research should also examine whether the nonlinear relationships found in this study extend to normative and continuance commitment. For example, normative commitment has been described as possessing a different nature depending on whether it is associated with high affective commitment or high continuance commitment (and low affective commitment) (Gellatly et al., 2006). Another perspective on this issue could be the presence of nonlinear relations between normative commitment and work outcomes. Future research should examine this issue more closely.

Similarly, additional testing is needed on the generalizability of these findings to new samples and contexts. Indeed, it could be that particular contextual factors influence the strength of the observed relations. For example, commitment to customers may be more important in long-term health-care organizations like this one, where most of the job is centered on long-term patient care. In particular, future research should attempt to replicate these results longitudinally. The cross-sectional
design precludes conclusions regarding the direction of the observed associations. It is unclear whether commitment precedes the outcomes or vice versa. More definitive conclusions regarding the directionality and temporal precedence of these associations could be obtained with panel studies, enabling a more rigorous examination of how changes in commitment relate to changes in outcomes.

It is true that many alternative statistical explanations can be provided for nonlinear relations (e.g. Le et al., 2011), such as non-normality or heteroskedasticity. These possibilities were probed and found not to explain the observed results. Nevertheless, these possibilities should also be considered in future studies. One thing, however, is clear: one cannot simply assume that linearity assumptions will hold without systematic verification. In this study, most of the observed relations were curvilinear, and although some of these results may be due to the specific characteristics of the sample, the particular design of this study or the fragile nature of nonlinear relations, the evidence presented here suffices to justify further probing into the observed relationships. Methodologically, these results illustrate the need for research probing the limits of generally agreed-upon theoretical views, even in fields that seem well-documented. They also show the dangers of grounding research questions and analytical choices solely on previous theoretical hypotheses without questioning their implicit assumptions.

Implications for practice and society

Our results support Randall’s (1987) and Siegrist et al.’s (2004) hypotheses regarding the potential costs of over-commitment, at least in terms of in-role performance, cynicism and professional efficacy. Conversely, the relations between commitment and OCBs and emotional exhaustion (the main component of burnout) proved perfectly linear with no change in the direction of the relations at extreme levels. These findings have implications for management and the society. First, given the curvilinear relations of some affective commitments to work outcomes found in this study, organizations should be encouraged to maintain commitment at optimal levels rather than attempt to push it to extreme levels. Indeed, managers and policy makers should be aware of potential trade-offs and diminishing returns on investment to unrestrained efforts to improve employees commitment. Commitment interventions should thus strive to reach a multi-focal equilibrium among potential targets of commitment and be coupled with organizational interventions designed to ensure that psychological contracts are respected to the provision of appropriate resources and recognition to employees. More broadly, our findings suggest potential causes underlying the curvilinear relations of commitment to outcomes, such as resource drain, effort-reward imbalance (Siegrist et al., 2004) or work overload (Vandenberghhe et al., 2011) accompanying high levels of commitment. In the long term, this may lead to side effects such as health problems among “over-committed” people and, in turn societal costs. Therefore, both organizations and the society would benefit from management practices focusing on the long-term maintenance of equilibrated levels of commitment.

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**About the authors**

Alexandre J.S. Morin, PhD, is Professor at the Department of Psychology of the University of Sherbrooke (until September 2012) and Associate Professor in the Centre for Positive Psychology and Education of the University of Western Sydney. His research interests are centered on substantive methodological synergies aimed at illustrating the usefulness of powerful new statistical methods (among which exploratory structural equation models, mixture models for cross-sectional and longitudinal data and complex latent curve models) in the comprehension of substantively important research questions related to multidimensional conceptions of self-concept (including commitments), psychological health and well-being and internalized disorders (including burnout). Alexandre J.S. Morin is the corresponding author and can be contacted at: alexandre.morin@usherbrooke.ca

Christian Vandenberghe is a Professor of Organizational Behaviour at HEC Montreal. Since 2005, he has been the holder of the Canada Research Chair in management of employee commitment and performance. His research interests include organizational commitment, turnover and performance, organizational change, and employee well-being. His work has been published in a variety of journals, including Journal of Applied Psychology, Journal of Organizational Behavior, Journal of Occupational and Organizational Psychology, Journal of Vocational Behavior, Group and Organization Management and Human Resource Management.

Marie-Josée Turmel, DPs, completed a professional doctoral degree at the Department of Psychology of the University of Sherbrooke, and her doctoral thesis focused on the risks and benefits of over-commitment. She currently teaches Psychology in the Department of Humanities of the CEGEP of Granby Haute-Yamaska.

Isabelle Madore obtained her MSc in Human Resources Management (HRM) at HEC-Montreal and her Master’s thesis (prized as the best of the year in HRM), focused on workplace affective commitment and organizational citizenship behaviors. She now works at the University of Sherbrooke as a full-time organizational development specialist, while finding time to pursue her research activities.

Christophe Maiano, PhD, is Professor at the Department of Psychoeducation and Psychology of the Université du Québec en Outaouais. His research interests are centered on the assessment and development of multidimensional self-conceptions and related concepts in adolescents with or without intellectual disabilities. More specifically he studies the influence of social contexts (social comparisons, stereotypes, significant others, peers, schools, etc.) on the construction and development of these self-conceptions, and the impact of these self-conceptions on the biopsychosocial adaptation of these youths (obesity, eating pathologies, depression, etc.).