Investigating the Longitudinal Effects of Surface Acting on Managers' Functioning Through Psychological Needs

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This study is based on the premise that managers are expected to regulate their emotions in the form of surface acting. More specifically, drawing on self-determination theory, we explored the role of psychological needs for autonomy, competence, and relatedness in explaining the influence of surface acting on supervisors' job satisfaction and work engagement over time. Data were collected at 2 time points, over a 3-month period, from a sample of 435 French managers working in the health care industry. Results revealed that surface acting negatively predicted managers' job satisfaction and work engagement over time, through the satisfaction of their psychological needs. However, managers' need thwarting did not explain these positive outcomes. Overall, these findings provide insight into the longitudinal adverse effects of managers' surface acting on their functioning and corroborate the distinct role of psychological need satisfaction and thwarting. Theoretical contributions and perspectives, as well as implications for practice are discussed.

Keywords: emotional labor, job satisfaction, managers, psychological need satisfaction and thwarting, work engagement

In a world characterized by a growing service industry, many jobs involve interacting with others. Hence, dealing with one's emotions has become an important part of most workers' job. As a matter of fact, whether the emotional demands they face are internal (e.g., coworkers, management) or external (e.g., customers, patients, students; Grandey, Kern, & Frone, 2007), employees are expected to deal with such demands in a way that is congruent with the values and norms of their organization/occupation (i.e., emotional display rules; Ashforth & Humphrey, 1993), even though it is incongruent with the emotions they genuinely feel. In other words, workers have to manage their actual emotions so that they meet those organizational/occupational norms and values, this effort being referred to as emotional labor. First introduced by Hochschild (1983) to illustrate flight attendants' duty to put on a constant smile even though they feel differently, this concept has more generally been defined as "the act of displaying the appropriate emotion (i.e., conforming with a display rule)" (Ashforth & Humphrey, 1993, p. 90).

More specifically, researchers have consensually identified two main ways of performing emotional labor, namely deep and surface acting (Ashforth & Humphrey, 1993; Hochschild, 1983). Deep acting is described as an antecedent-centered emotion regulation strategy as it takes place before the development of an emotion (Grandey, 2000). It consists in cognitively reassessing one's emotions so that they authentically match the emotions that are expected to be displayed as part of the job. In contrast, surface acting occurs when the emotion has already developed, and, as such, is referred to as a response-focused form of emotion regulation strategy (Grandey, 2000). When performing surface acting, employees deliberately show different emotions than the ones they authentically feel so that they fit the job's requirements. To be more specific, surface acting involves faking unfelt but organizationally desired emotions and hiding authentically felt ones (Adams & Webster, 2013; Lee, Lovell, & Brotheridge, 2010).

Even though research showed that surface acting leads to negative consequences such as emotional exhaustion (e.g., Grandey,

2003), it also demonstrated that it is a valuable antecedent of positive outcomes. For instance, surface acting was shown to negatively relate to job satisfaction (Yang & Chang, 2008) or higher personal accomplishment (Brotheridge & Grandey, 2002). Surface acting is also thought to have a more negative relationship to positive outcomes than deep acting (Rupp, McCance, & Grandey, 2007). Additionally, previous studies showed the relevance of studying surface acting independently (e.g., Adams & Webster, 2013; Pugh, Groth, & Hennig-Thurau, 2011) as it constitutes a specific experience of emotion regulation and uniquely relates to distinct consequences (for a review, see Hülsheger & Schewe, 2011). Accordingly, in the present research, we solely focused on surface acting to advance the understanding of its adverse effects on managers' positive attitudes in the form of work engagement and job satisfaction. Indeed, despite growing empirical evidence that surface acting impaired employees' functioning (Hülsheger & Schewe, 2011; Kammeyer-Mueller et al., 2013), most authors point out the necessity to use longitudinal designs to offer a more thorough examination of the causal pathways involved in these relationships (Chen et al., 2012; Geng, Liu, Liu, & Feng, 2014).

In addition, prior studies investigating the longitudinal effects of emotional labor on positive outcomes (e.g., Côté & Morgan, 2002; Hülsheger, Lang, & Maier, 2010) mostly focused on service workers. Yet, we will argue that emotional labor is also a concern for managers, and that the effects of surface acting on supervisors' attitudes overtime deserve to be studied in their own right. Although largely overlooked among managers, surface acting was shown to be unrelated to supervisors' functioning over a 6-month period (Arnold, Connelly, Walsh, & Martin Ginis, 2015). These authors suggested that the effects of surface acting may be observable in a shorter time span. Our study therefore aimed to contribute beyond prior work by verifying such shorter effects. Specifically, we chose to study the effects of surface acting over a 3-month period. We expected this specific time lag to be suitable because it goes beyond daily fluctuations (e.g., Hetland et al., 2015) but it is still short enough to capture changes that could not be reflected in longer time spans (e.g., Arnold et al., 2015). In line with these considerations, the main purpose of our study was to further look into the influence of surface acting on managers' optimal functioning, over a 3-month period.

We also examined the mediating role of psychological need satisfaction and thwarting in the relationship between surface acting and managers' optimal functioning. Indeed, these dimensions have been shown to be valuable mechanisms in explaining the effects of social factors on individuals' psychological adjustment in a variety of settings (e.g., Quested et al., 2013; Ratelle, Larose, Guay, & Senécal, 2005) including the work context (e.g., Trépanier, Forest, Fernet, & Austin, 2015). Self-determination theory (SDT) proposes that it is when their environment allows individuals to act in line with their intrinsic values and beliefs that they can have their psychological needs met, which in turn leads to optimal functioning. Yet, in essence, surface acting results from an environmental constraint implying that one cannot act in congruence with their intrinsic values and their true self. Therefore, it is plausible that when managers have to perform surface acting as part of their job, it might contribute to make them feel that their psychological needs are not met. Consistent with this view, Grandey, Rupp, and Brice (2015) recently suggested that emotion

work requirements can impede workers' optimal functioning through its adverse influence on employee psychological needs. However, to our knowledge, no studies have provided empirical evidence for the longitudinal effects of surface acting through psychological needs. The present study thus offered to extend prior work by empirically testing these theoretical suggestions.

Surface Acting and Supervisors' Functioning

Although most of the previously observed effects of emotion regulation have been studied in service employees (e.g., Gabriel, Daniels, Diefendorff, & Greguras, 2015; Lee & Ok, 2014), several authors suggest that leaders may be singularly concerned with surface acting. In the present study, we focused on managers of health care centers whom we believed were a particularly good fit for studying surface acting. Indeed, the health care industry is concerned with major changes and managers have to implement new policies that they, themselves, do not necessarily believe in (Saksvik & Tvedt, 2009). Yet, they are expected to show positive emotions in supporting these new practices to encourage their teams to carry out such changes. Moreover, it is well documented that the health care industry is concerned with shortages in experimented professionals and cuts in financial resources (Berkman et al., 2015; Buchan & Calman, 2004). Therefore, managers in this context might have to perform surface acting when asking their subordinates to perform a certain array of tasks while knowing that they do not have the right conditions and resources to do so. Indeed, in such context, they may feel bad to knowingly ask their employees to do more with less, yet they are required to show positive emotions doing so. Finally, managers in this industry have to keep a positive attitude when facing their subordinates' negative emotional reactions to such a demanding context (Frost, 2004; Gardner, Fischer, & Hunt, 2009), even though they themselves might feel anxious or unsecure.

For these reasons, managers in this industry are led to perform surface acting, yet their emotional displays can have important consequences. For instance, managers' emotional displays might affect their subordinates. Indeed, researchers argue that when managers engage in surface acting, their subordinates may be able to perceive this inauthenticity, consequently preventing supervisors from generating the desired impression on their audience (Newcombe & Ashkanasy, 2002). Instead, surface acting, if perceived by the audience, may very well negatively affect employees' attributions about their manager's intentions, trustworthiness and leadership abilities (Gardner et al., 2009; Rajah, Song, & Arvey, 2011). Conversely, authors showed that workers' perceptions of their leader's emotional sincerity positively affected their trust in said leader, which in turn positively influenced their performance (Caza, Zhang, Wang, & Bai, 2015). Because supervisors' emotional displays are under such a scrutinous watch by their subordinates, they are incited to regulate their emotions so that they meet the standards of what is expected from them, in line with the needs of their subordinates (Gardner et al., 2009).

In recent years, research has repeatedly addressed the effects of managers' surface acting on their subordinates' optimal functioning (Glasø & Einarsen, 2008; Humphrey, Pollack, & Hawver, 2008). For instance, Fisk and Friesen (2012) showed that supervisor's surface acting negatively affected subordinates' positive attitudes toward work, for those who had high quality exchanges

with their supervisor. However, to this day, little is known about the impact of this emotion regulation strategy on supervisors' own attitudes (Arnold et al., 2015). Yet, managers' attitudes are crucial to organizations. Indeed, companies need their supervisors to have positive attitudes toward work as they hold a strategic role in driving organizational performance by coordinating executive goals and employees' needs (Montgomery, Peeters, Schaufeli, & den Ouden, 2003). For instance, managers' work engagement is of particular importance (Hyvönen, Feldt, Salmela-Aro, Kinnunen, & Mäkikangas, 2009; Kinnunen, Feldt, & Mäkikangas, 2008) because they are responsible for orienting workers' efforts toward organizational goals but also because they may transfer their engagement to their subordinates (Bakker, Schaufeli, Leiter, & Taris, 2008). Similarly, managers' job satisfaction is essential as their thriving not only is beneficial to their own functioning but it also impacts employee well-being (Bakker, Westman, & Van Emmerik, 2009) and organizational performance (Netemeyer, Maxham, & Lichtenstein, 2010).

Managers' positive attitudes might however be affected when they perform surface acting. As a matter of fact, when complying with organizational norms, they might build up feelings of inauthenticity, thus discouraging them from reciprocating in the form of positive attitudes and behaviors toward the organization (e.g., work engagement; Blau, 1964; Gouldner, 1960). Moreover, it is worth noting that one of the first authors who defined work engagement (Kahn, 1990), emphasized that it does not merely refer to allocating efforts to one's work, but it is more about being able to place one's true nature at the service of one's professional activity. In other words, work engagement implies that one is able to express and accomplish the most of their true potential and intrinsic values through work (Kahn, 2010). Therefore, the wider the gap between organizational display rules and supervisors' genuine emotions, the less inclined they might be to identify to their job and to feel engaged at work as, in this case, their professional activity goes against their longing for consistence and balance (Heider, 1946). Similarly, this feeling of inauthenticity managers experience when they have to fake organizationally desired emotions and to hide their genuine feelings might make them less likely to experience positive moods and emotions at work (Chen et al., 2012; Hülsheger & Schewe, 2011). Because affective experiences at work have the power to alter workers' evaluative judgments about their job (Weiss & Cropanzano, 1996), managers might thus be more prone to evaluate their job in a negative light, in the form of lower job satisfaction (Weiss, 2002).

Hypothesis 1: Surface acting has a negative effect on managers' work engagement and job satisfaction.

Surface Acting and Psychological Need Satisfaction/Thwarting

As mentioned, surface acting might lead to decreased levels of positive consequences, and scholars have taken interest in the psychological mechanisms underlying these effects. One should note that several hypotheses have been offered to explain the adverse effects of surface acting. For instance, in their meta-analytic review, Hülsheger and Schewe (2011) take an inventory of proposed theoretical mechanisms including energy/ego depletion (i.e., surface acting is an effortful strategy that drains one's

resources), felt inauthenticity (i.e., sense of personal authenticity is endangered because surface acting involves to display emotions in discordance with one's actual feelings), impairment of social interactions (i.e., others can detect inauthentic displays created by surface acting and unfavorably react to them), and emotional dissonance (i.e., tension created by the conflict between required and genuine emotions; see also Côté, 2005 for a review). Some authors did also empirically test potential mechanisms underlying such effects and provided empirical evidence to confirm their conceptual suggestions. For instance, several studies looked into how emotional labor, by depleting workers' resources, could in turn make them less prone to prosocial behaviors (Trougakos, Beal, Cheng, Hideg, & Zweig, 2015) and more detrimental behaviors (Yam, Fehr, Keng-Highberger, Klotz, & Reynolds, 2016).

Grandey et al.'s (2015) review of the mechanisms explaining how emotional labor is costly to employees comes to suggest to empirically test a different framework than this resource-based one. Indeed, authors offer an alternative "person-centric perspective to propose that these costs occur because emotional labor is a work requirement that violates fair and ethical treatment" (p. 777). In line with this theoretical conclusion, authors offer a strongly empirically grounded theory (i.e., SDT) to further specify this proposed mechanism. More specifically, they suggest that emotional labor might impair individuals' functioning by threatening their psychological needs for autonomy, competence and relatedness, which SDT defines as essential nutrients for individuals' optimal functioning (Deci & Ryan, 2000). The need for autonomy refers to individuals' need to feel volitional and responsible for their actions (deCharms, 1968). The need for competence underscores one's need to feel efficient when interacting with one's social environment and to have opportunities to express one's abilities (White, 1959). Finally, the need for relatedness emphasizes individuals' need to feel secure in their relationships and to be able to rely on others (Baumeister & Leary, 1995).

SDT was shown to be a valuable framework to deepen our understanding of the emotional labor processes (e.g., Cossette, 2014; Cossette & Hess, 2012; Sisley & Smollan, 2012). However, this line of research focused on the motives to engage in different emotion regulation strategies. In the present research, we offer to take a step forward in the emotional labor process and apply this framework to understand the effects of surface acting and the mechanisms (i.e., psychological needs) underlying them. Though not necessarily grounded in SDT, some studies have investigated comparable variables that respectively share conceptual similarities with the needs for autonomy (e.g., personal control; Grandey, Fisk, & Steiner, 2005), competence (e.g., self-efficacy; Pugh et al., 2011), and relatedness (e.g., social support; Duke, Goodman, Treadway, & Breland, 2009) to understand when emotional labor is more or less distressing. Although these studies emphasize the importance of similar dimensions, one should first note that these studies explored all three needs separately. Yet, SDT demonstrated the possibility of considering these needs as a whole (e.g., Gillet, Forest, Benabou, & Bentein, 2015) as they are equally important "psychological nutrients that are essential for ongoing psychological growth, integrity, and well-being" (Deci & Ryan, 2000, p. 229).

Second, even though these buffering effects of conceptually similar variables emphasize the relevance of these needs, those studies (e.g., Duke et al., 2009) considered these dimensions as

moderators of the effects of emotional labor. Yet, SDT has both theoretically (e.g., Vallerand, 1997) and empirically (e.g., Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008) largely confirmed the power of considering these needs as mediating variables. Indeed, SDT posits that individuals' social environment allows them to have their needs more or less met, which in turn affects their functioning (Deci & Ryan, 2012). Hence, these needs have been shown to be psychological mechanisms underlying the influence of one's social environment on their psychological functioning in many contexts, such as the sports (e.g., Quested et al., 2013) or the educational (e.g., Ratelle et al., 2005) domains. One should also note that previous studies showed felt inauthenticity to be a valuable mechanism to explain daily variations in one's evaluation of the job (Judge, Woolf, & Hurst, 2009; Scott & Barnes, 2011). It is possible that this momentary feeling of inauthenticity, when sustained on the long run, might turn into a deeper sense that one's intrinsic goals and values are not supported by their work environment (i.e., low need satisfaction) which may yield to detrimental outcomes in a longer temporal frame. For instance, Trépanier, Fernet, & Austin (2015) showed that the inability to express one's true potential at work (i.e., low need satisfaction) impaired employee functioning three months later.

Indeed, in the work domain, research has repeatedly demonstrated that employees' optimal functioning depends on whether their work environment can satisfy those three needs (e.g., Fernet, Austin, Trépanier, & Dussault, 2013; Thibault Landry et al., 2016). A recent line of research further showed that not only can the work environment partially satisfy the needs for autonomy, competence, and relatedness, but it can also thwart these needs (Gillet, Fouquereau, Forest, Brunault, & Colombat, 2012). Indeed, scholars have indicated that psychological need satisfaction and thwarting are not the opposite ends of a continuum, but instead they are two distinct psychological experiences (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011). In other words, the work environment can give employee a sense of not being completely independent, efficient, or appreciated (i.e., low need satisfaction), but it can also make them feel oppressed, incompetent, or despised (i.e., high need thwarting). Previous research showed that even though need satisfaction and thwarting are two separate psychological experiences with distinct consequences, they can yet share common antecedents (e.g., Gillet, Fouquereau, Forest, et al., 2012, Study 2; Trépanier et al., 2016).

In line with this, it is arguable that surface acting influences both need satisfaction and thwarting. It could also be defended that it is because they feel that their needs for autonomy, competence, and relatedness are not supported that managers are led to surface act as a result. Indeed, the order of causality between surface acting and psychological needs is open to question as surface acting—unlike emotional requirements which are more obviously grounded in the environment—occurs within the person, just like psychological needs. Yet, in the current study, we offer to apprehend surface acting as an outcome to an environmental constraint implying that one is required to express different emotions than the ones they genuinely feel, which would in turn influence their psychological needs. Moreover, we will further carry out reversed causation analyses to thoroughly verify our hypothesized order of causality.

To be more specific, we argue that surface acting might not allow the satisfaction of workers' psychological needs and foster the thwarting of those needs. As a matter of fact, when performing surface acting, managers find themselves unable to express their genuine emotions, which may induce a felt loss of control over their own feelings (Grandey et al., 2015). Indeed, authors showed display rules and their effects through surface acting to be opposed to autonomy (Goldberg & Grandey, 2007), as being prevented from expressing their true feelings may give employees a reduced sense of volition (i.e., low satisfaction of the need for autonomy) and even more intensely make them feel coerced into expressing unauthentic emotions (i.e., autonomy need thwarting). Additionally, although one could argue that, when performing surface acting, supervisors may feel more efficacious as they meet those standards that are expected of them (Gardner et al., 2009), it is worth noting that the need for competence does not merely refer to feeling efficient in the eyes of others, but it is a matter of being able to feel useful in fully expressing one's true potential (Deci & Ryan, 2008), which in essence, surface acting does not allow. Having to comply with organizational display rules might indeed come with an impression that one's authentic emotions are not worthy or suited to the job. Indeed, surface acting was previously negatively related to feelings of self-efficacy (i.e., personal accomplishment; Brotheridge & Lee, 2003), thus suggesting that it may make supervisors feel less efficient (i.e., low satisfaction of the need for competence) and even more adversely give them a sense that their genuine feelings are worthless (i.e., competence need thwarting). Finally, when performing surface acting, managers might feel unsupported and sense that their dignity is being disrespected as they are not appreciated for who they really are and for what they really feel (Grandey et al., 2015). They might also experience their interactions as inauthentic, for they are based on a social mask, which is likely to affect their social relationships (English & John, 2013) by preventing them from feeling truly affiliated with their peers (i.e., low satisfaction of the need for relatedness) and, even worse, making them feel isolated or even rejected (i.e., relatedness need thwarting).

In sum, surface acting might restrain or even obstruct the expression of managers' true individual potential (Deci & Ryan, 2008), therefore resulting in low need satisfaction as well as a more actively negative experience of high need thwarting. In other words, surface acting is likely to respectively positively and negatively influence psychological need thwarting and satisfaction.

Hypothesis 2: Surface acting has a positive effect on psychological need thwarting.

Hypothesis 3: Surface acting has a negative effect on psychological need satisfaction.

Mediating Role of Need Satisfaction/Thwarting

More precisely, it appears that psychological need satisfaction and thwarting may play a key role in explaining the effects of surface acting on managers' functioning. On one hand, need satisfaction has been related to a variety of positive indicators such as work engagement and job satisfaction (e.g., Trépanier, Fernet, & Austin, 2015; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). Indeed, when the work environment allows individuals to feel independent, efficient, and appreciated, they are provided with those psychological resources that promote their personal development and their optimal functioning (Deci & Ryan,

2008). However, to our knowledge these effects have mostly been demonstrated cross-sectionally, even though one study did show a positive longitudinal effect of need satisfaction on work engagement in a sample of nurses (Trépanier, Fernet, & Austin, 2015). More generally, several authors proved need satisfaction to be a valuable mechanism to explain the effects of job characteristics on employee job satisfaction (e.g., Gillet, Fouquereau, Forest, et al., 2012; Kovjanic, Schuh, Jonas, Van Quaquebeke, & Van Dick, 2012). In other words, when their professional activity contributes to the satisfaction of their psychological needs, workers tend to have a more positive evaluation of their work experience (i.e., job satisfaction). Similarly, research demonstrated that need satisfaction underlay the effects of organizational characteristics on work engagement (Gillet, Fouquereau, Huyghebaert, & Colombat, 2016; Trépanier, Fernet, & Austin, 2013). To be more precise, when workers perceive that their job contributes to their self-realization and their virtuous potential (Deci & Ryan, 2008), they are more likely to engage in their work. One could thus assume that, because engaging in surface acting does not allow supervisors to feel volitional, competent and connected to others (i.e., low need satisfaction), it might consequently devalue the assessment they make about their job (i.e., low job satisfaction) and discourage them from investing efforts into a professional activity (i.e., low work engagement) that does not allow them to live accordingly to their authentic self and values (Ashforth & Humphrey, 1993; Deci & Ryan, 2008).

On the other hand, need thwarting was shown to associate with impaired functioning in employees (e.g., Gillet et al., 2015; Stebbings, Taylor, Spray, & Ntoumanis, 2012). Authors argue that a sustained situation of need frustration contributes to a detrimental spiral of vulnerabilities for nonoptimal functioning (Vansteenkiste & Ryan, 2013). For instance, Gillet, Fouquereau, Forest, et al. (2012) demonstrated that psychological need thwarting had a negative effect on job satisfaction. Indeed, when workers feel oppressed, despised, and incompetent, they are more likely to make negative assessments about their job situation. Similarly, one could argue that when going through such a frustrating psychological experience, employees might feel discouraged from contributing to an activity that actively threatens their integrity, resulting in lower work engagement (Gouldner, 1960). However, to our knowledge, the effects of psychological need thwarting on employee job satisfaction and work engagement have never been investigated longitudinally. More generally, recent research showed that psychological need thwarting could contribute to explain the effects of environmental constraints on workers' impaired functioning (Bartholomew, Ntoumanis, Cuevas, & Lonsdale, 2014; Cuevas, Sánchez-Oliva, Bartholomew, Ntoumanis, & García-Calvo, 2015), including over time (Trépanier et al., 2016). Thus, need thwarting might explain the adverse effects of emotion regulation on managers' positive attitudes. Because it gives supervisors a sense that their true self is being oppressed, despised, and inadequate (Grandey et al., 2015), engaging in surface acting might consequently make them less satisfied with such a frustrating work experience (i.e., low job satisfaction) and actively prevent them from devoting any energy to an activity that threatens their integrity (i.e., low work engagement).

In line with the above rationale, this study aimed to examine whether need satisfaction and thwarting mediated the longitudinal effects of surface acting on job satisfaction and work engagement.

Precisely, in the present research we expected both psychological need satisfaction and thwarting to mediate the adverse effects of surface acting on supervisors' attitudes over time. Indeed, a few studies showed psychological need satisfaction and thwarting to be significant mechanisms to longitudinally explain the influence of organizational characteristics on employee functioning (Trépanier, Forest, et al., 2015; Trépanier, Fernet, & Austin, 2015). However, one should note that even though psychological need satisfaction and thwarting can both explain a common set of outcomes, the links relating psychological need satisfaction to positive outcomes have been shown to be stronger than those between need thwarting and such positive dimensions (e.g., Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Gillet, Fouquereau, Lequeurre, Bigot, & Mokounokolo, 2012). Indeed, when individuals' social environment provides them with these psychological nutrients (i.e., psychological needs), it adds up to their resources and contributes to their personal growth, thus reinforcing their optimal functioning. Conversely, when their environment thwarts individuals' needs, it actively obstructs their integrity and therefore triggers more acute negative indicators. Hence, the intense negative experience of need thwarting holds a stronger association with negative indicators of maladaptive functioning (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011). We thus expected the longitudinal effects of psychological need thwarting on supervisors' job satisfaction and work engagement to be significant but weaker than those relating need satisfaction to these same outcomes.

In sum, in the current research, we suggested that the longitudinal effects of surface acting on job satisfaction and work engagement would be partially mediated by psychological need satisfaction and thwarting. To be more specific, we supposed these mediations to be partial—versus total—because, as previously mentioned, research indicated that other mechanisms can contribute to explain the detrimental effects of surface acting on employee health (for a review, see Hülsheger & Schewe, 2011).

Hypothesis 4: Need satisfaction and thwarting partially mediate the influence of surface acting on managers' work satisfaction and engagement.

Method

Participants and Procedure

For this study, data was collected at two time points over a 3-month period (i.e., February & May, 2015). An e-mail was sent to the heads of approximately 9,000 French health care centers two to four weeks before each data collection to explain the general purpose of the study and to encourage them to forward this information to all managers in their organization. This e-mail explained that participation was voluntary and invited participants to complete an online questionnaire at two time points. Participants were assured that their responses were to be kept anonymous and that they were only required to indicate an identification code to allow researchers to match their responses at both data collections.

At Time 1, a total of 1,173 managers took part in the online survey (indeterminable response rate). Among these participants, 435 agreed to complete the questionnaire again at Time 2 (retention rate = 37.08%) and represented the final sample. Their

average age was 48.05 (SD = 7.72), 146 of them were women, 284 were men, and 5 did not specify their gender. These managers were mostly married (52.87%) or living with someone (15.86%), whereas fewer of them were single (10.80%), divorced (10.57%), in a civil union (8.28%), or widowed (0.46%). Twenty percent of participants were managers in a medical or a paramedical crew, 17.24% managed a team of social workers, 10.57% were managers in administrative departments, 5.52% managed a technical team, and most participants held a general management position (46.67%).

Descriptive analyses were conducted to compare participants who took part solely in the first data collection (i.e., T1) to those who completed the questionnaire at both time points (i.e., T1-T2). Managers who only took part in the T1 survey did not show significantly different scores from those who participated at both data collection times as far as surface acting (M_{T1} = 2.48, M_{T1-T2} = 2.44; p = .45), age (M_{T1} = 47.80, M_{T1-T2} = 48.05; p = .61), gender (χ^2 = 1.66; p = .20), marital status (χ^2 = 7.55; p = .18), and job position (χ^2 = 4.76; p = .31) were concerned. However, results indicated significant differences regarding need satisfaction (M_{T1} = 5.23, M_{T1-T2} = 5.37; p < .01), need thwarting (M_{T1} = 2.70, M_{T1-T2} = 2.53; p < .05), work engagement (M_{T1} = 5.65, M_{T1-T2} = 5.77; p < .05), and job satisfaction (M_{T1} = 4.66, M_{T1-T2} = 4.84; p < .01). Altogether, these results indicate that participants retained for T2 felt more positively about their work experience (i.e., more need satisfaction, work engagement, and job engagement, but less need thwarting), and one should note that this attrition of more negatively oriented people between T1 and T2 might have biased our results. However, because mean differences were less than one fifth of standard deviations, we concluded that no serious selection problem occurred.

Materials

All measures were administered in French. More specifically, all scales were either developed or already validated in French, except for the surface acting scale which was translated in French using the standard back-translation technique (Brislin, 1980) as recommended by Vallerand (1989).

Surface acting.   Surface acting, in the form of faking unfelt emotions and hiding felt ones (Lee et al., 2010), was assessed with six items from the revised version of Brotheridge and Lee's (2003) Emotional Labor Scale (Lee & Brotheridge, 2006). Participants were asked to rate on a 5-point scale ranging from 1 (*never*) to 5 (*always*), how frequently they performed such behavior on a typical work day. More specifically, three items referred to *hiding feelings* (T1α = .81; T2α = .89) (e.g., "Hide my true feelings about a situation"), and three items assessed *faking emotions* (T1α = .76; T2α = .81) (e.g., "Showing emotions that I don't feel"). Confirmatory factor analyses (CFA) were conducted to identify the best measurement model for this measure. Three models were tested. The first had all items loading on a *surface acting* latent variable, the second had the three *hiding feelings* items and the three *faking* emotions items loading respectively on their corresponding dimension as a latent variable. Finally, in the third model, the three *hiding feelings* items and the three *faking* emotions items loaded respectively on their corresponding dimension as a latent variable (item loadings were all above .61), and both dimensions loaded on a *surface acting* second order variable

(T1α = .82; T2α = .87). This last model showed the best fit indices, therefore, like in previous research (e.g., Adams & Webster, 2013), we used a *surface acting* latent variable in further analyses.

Need satisfaction.   Need satisfaction was measured with nine items from the scale developed by Gillet, Rosnet, and Vallerand (2008), which were here contextualized with the sentence "At work . . .". Participants were asked to rate on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) the extent to which they experienced the described situations. Three items assessed the need for competence (T1α = .79; T2α = .80; e.g., "I feel like I am able to meet the demands of the tasks that I have to perform"), three items referred to the need for autonomy (T1α = .74; T2α = .80) (e.g., "I have the opportunity to make decisions about the tasks that I have to perform"), and three items measured the need for relatedness (T1α = .76; T2α = .79) (e.g., "I get along well with the people whom I interact with"). Previous studies showed good psychometric properties for this scale adapted to the work setting (e.g., Gillet et al., 2015). As for surface acting, three CFA were conducted to identify the best measurement model for this measure. The first had all items loading on a *need satisfaction* latent variable, the second had the three *autonomy*, the three *competence*, and the three *relatedness* items loading respectively on their corresponding dimension as a latent variable. Finally, in the third model, the three *autonomy*, the three *competence*, and the three *relatedness* items loaded respectively on their corresponding dimension as a latent variable (item loadings were all above .61), and all three dimensions loaded on a *need satisfaction* second order variable (T1α = .86; T2α = .88). This last model showed the best fit indices, therefore like in previous research (e.g., Trépanier, Fernet, & Austin, 2015), we used a *need satisfaction* latent variable in further analyses.

Need thwarting.   Need thwarting was assessed with the 9-item Psychological Need Thwarting at Work Scale (Gillet, Fouquereau, Lequeurre, et al., 2012). Participants were asked to rate on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) the extent to which they experienced the described situations. Three items assessed the need for competence (T1α = .80; T2α = .80; e.g., "It happens that I hear things that make me feel incompetent"), three items referred to the need for autonomy (T1α = .84; T2α = .83; e.g., "I feel forced to behave in a certain way"), and three items measured the need for relatedness (T1α = .78; T2α = .81; e.g., "I think other people hate me"). Once again, three CFA were conducted to identify the best measurement model for this measure. The first had all items loading on a *need thwarting* latent variable, the second had the three *autonomy*, the three *competence*, and the three *relatedness* items loading respectively on their corresponding dimension as a latent variable. Finally, in the third model, the three *autonomy*, the three *competence*, and the three *relatedness* items loaded respectively on their corresponding dimension as a latent variable (item loadings were all above .70), and all three dimensions loaded on a *need thwarting* second order variable (T1α = .88; T2α = .88). This last model showed the best fit indices, therefore like in previous research (e.g., Trépanier, Forest, et al., 2015), we used a *need thwarting* latent variable in further analyses.

Work engagement was measured with a subscale from the French version of the short version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006), where re-

sponses were indicated on a 7-point scale ranging from 1 (*never*) to 7 (*always*). More specifically, three items were used to assess *dedication* (T1α = .85; T2α = .86) (e.g., "I am enthusiastic about my job"). This dimension was emphasized as a key component of work engagement (Langelaan, Bakker, van Doornen, & Schaufeli, 2006; Schaufeli & Bakker, 2004), as it refers to a specific psychological state of enthusiasm, identification and inspiration with regards to work, which can thus be studied and operationalized independently from other dimensions (e.g., Bakker, Demerouti, & Schaufeli, 2003; Hetland et al., 2015).

Work satisfaction was assessed with the French version of the Satisfaction with Life Scale (Blais, Vallerand, Pelletier, & Brière, 1989; Diener, Emmons, Larsen, & Griffin, 1985) but the words "life satisfaction" were replaced by "job satisfaction". Participants were asked to rate on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) each of the five items (T1α = .88; T2α = .88; e.g., "I am satisfied with my work"). Previous studies showed good psychometric properties for this scale adapted to the work setting (e.g., Gillet, Fouquereau, Forest, et al., 2012).

Results

Preliminary Analyses

Correlation analyses were first conducted (see Table 1) and showed significant associations between T1 surface acting and respectively T2 need satisfaction ($r = -.31$; $p < .001$), T2 need thwarting ($r = .50$; $p < .001$), T2 work engagement ($r = -.26$; $p < .001$), and T2 job satisfaction ($r = -.38$; $p < .001$). Moreover, results showed significant correlations between T1 need satisfaction and respectively T2 work engagement ($r = .45$; $p < .001$) and T2 job satisfaction ($r = .53$; $p < .001$), as well as between T1 need thwarting and respectively T2 work engagement ($r = -.29$; $p < .001$), and T2 job satisfaction ($r = -.47$; $p < .001$).

A series of models were then tested through structural equation modeling using AMOS. To determine the goodness-of-fit of these models, various fit indices were used: the chi-square (χ^2), the degree of freedom (*df*), the χ^2/df, the Incremental Fit Index (IFI), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Values greater than .90 and. 95 for the CFI and TLI respectively reflect adequate and excellent fit, while values smaller than .08 or

.06 for the RMSEA respectively indicate acceptable and excellent fit (Hu & Bentler, 1998; Marsh, Hau, & Grayson, 2005; Marsh, Hau, & Wen, 2004; Vandenberg, & Lance, 2000). As for the χ^2/df, even though there is no consensus on the acceptable ratio for this index, recommendations indicate values ranging from 5.0 (Wheaton et al., 1977) to 2.0 (Tabachnick & Fidell, 2007).

Three measurement models were tested. The first model (M1a) consisted of all latent variables and indicators at T1, whereas the second model (M1b) included all latent variables and indicators at T2. In each of these models, covariances were allowed among all latent variables. Each latent variable had between two and five indicators. The three items of the dedication subscale were used as indicators of the *work engagement* latent variable, and job satisfaction was a latent variable with its five items as indicators. Given the large number of parameters to estimate, parcels were used as indicators for the *surface acting*, *need satisfaction*, and *need thwarting* latent variables. Specifically, two parcels (i.e., hiding feelings and faking emotions) were created as indicators of the latent construct of surface acting, and three parcels were used for each need (i.e., autonomy, competence, relatedness) as indicators for both the *need satisfaction* and *need thwarting* latent variables. Indeed, the use of parcels improves the model by lowering the number of parameters to estimate, but it still allows for the control of measurement errors between indicators (Little, Cunningham, Shahar, & Widaman, 2002).

Both models presented satisfactory fit indices (see Table 2), and all indicators were significantly related to their corresponding latent variable (βs ranging from .64 to .89, $p < .001$ at T1, and from .64 to .93, $p < .001$ at T2). A third measurement model was tested (M1c) by combining all latent variables and indicators at both measurement times, and consisted of 10 latent variables (i.e., surface acting, need satisfaction, need thwarting, work engagement, and job satisfaction, at T1 and T2) and 32 indicators. Following previous recommendations (Little, Preacher, Selig, & Card, 2007), in this model each indicator (i.e., item or parcel) at T1 was also allowed to covary with its corresponding indicator at T2. Results indicated that this model presented a satisfactory fit to the data (see Table 2).

Main Analyses

To test our hypotheses, we tested the proposed model (M2, see Figure 1) and compared it with four other models (M3–M6; i.e., stability model, reversed causation model, reciprocal model, alter-

Table 1
Means, Standard Deviations, and Correlations between Latent Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Surface acting (T1)	2.44	.73	—									
2. Need satisfaction (T1)	5.37	.73	−.33	—								
3. Need thwarting (T1)	2.53	1.12	.52	−.48	—							
4. Work engagement (T1)	5.77	.91	−.23	.52	−.28	—						
5. Job satisfaction (T1)	4.84	1.17	−.36	.64	−.50	.66	—					
6. Surface acting (T2)	2.58	.80	.66	−.32	.40	−.19	−.30	—				
7. Need satisfaction (T2)	5.38	.75	−.29	.59	−.43	.40	.50	−.38	—			
8. Need thwarting (T2)	2.56	1.09	.49	−.43	.70	−.24	−.41	.56	−.45	—		
9. Work engagement (T2)	5.69	.98	−.25	.46	−.27	.65	.51	−.29	.60	−.34	—	
10. Job satisfaction (T2)	4.87	1.12	−.37	.54	−.45	.51	.72	−.42	.66	−.52	.62	—

Note. $N = 435$. All associations are significant at $p < .001$. All variables were measured on a 7-point scale, with the exception of the surface acting scale which was assessed using a 5-point scale.

Table 2
Fit Indices for the Tested Models

Model description	χ^2	df	χ^2/df	IFI	TLI	CFI	RMSEA and 90% CI	AIC	Model comparison	$\Delta\chi^2$	Δdf
Measurement models											
M1a (T1 indicators)	385.82	93	4.15	.92	.90	.92	.085 [.076–.094]	—	—	—	—
M1b (T2 indicators)	441.41	93	4.75	.91	.89	.91	.093 [.084–.102]	—	—	—	—
M1c (T1 and T2 indicators)	1210.07	402	3.01	.92	.90	.92	.068 [.064–.072]	—	—	—	—
SEM models											
M2 (proposed)	1393.85	583	2.39	.93	.91	.93	.057 [.053–.060]	1709.85	—	—	—
M3 (stability)	1421.15	591	2.41	.93	.91	.93	.057 [.053–.061]	1721.15	M3 vs. M2	27.30**	8
M4 (reversed)	1400.47	583	2.40	.93	.91	.93	.057 [.053–.061]	1716.47	M4 vs. M5	21.30**	—
M5 (reciprocity)	1379.17	575	2.40	.93	.91	.93	.057 [.053–.061]	1711.17	M2 vs. M5	14.68n.s.	8
M6 (alternative full mediation)	1401.11	585	2.40	.93	.91	.93	.057 [.053–.061]	1713.11	M6 vs. M2	7.26*	2

Note. χ^2 = chi-square; df = degree of freedom; IFI = Incremental Fit Index; TLI = Tucker-Lewis Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; $\Delta\chi^2$ = Chi-square difference; Δdf = degree of freedom difference. n.s. = non significant.
* $p < .05$. ** $p < .01$.

native full mediation model). To assess all of these models, we considered the aforementioned indices as well as the *Akaike Information Criterion* (AIC). The models providing the best fit are represented by the lowest values on this index (Bozdogan & Ramirez, 1987). We also compared potential differences between our tested models with regard to their fit by computing a chi-square (χ^2) difference test, which allows to decide whether a model fits significantly better or worse than a competing one (Schermelleh-Engel, Moosbrugger, & Müller, 2003). This test applies to the comparison of nested models (i.e., one of the models contains an additional path, an additional loading, or an additional correlation), which is the case of our tested models (M2–M6). All models (M2–M6) were tested using an auto-regressive cross-lagged design (Bollen & Curran, 2004). This method offers the advantage to observe the temporal influence of a construct (e.g., T1 surface acting) on a different dimension (e.g., T2 work engagement), while controlling for the effect of previous levels of this variable (i.e., T1 work engagement). Cross-lagged models there-

Time 1   Time 2

Figure 1. The proposed model.

fore allow to minimize bias in assessing the cross-lagged influence between different dimensions (Cole & Maxwell, 2003). More specifically, in these models (M2-M6), each latent variable at T1 was related with a unidirectional link to its corresponding variable at T2 (i.e., auto-regressive effects). Moreover, each indicator (i.e., item or parcel) at T1 was allowed to covary with its corresponding indicator at T2, and all latent variables at T1 were connected together with covariances, as were all latent variables at T2.

Additionally, to rule out alternative explanations, we controlled for potentially predictive dispositional variables. For instance, negative orientations are established predictors of both surface acting (Kammeyer-Mueller et al., 2013) and employee functioning (Kaplan, Bradley, Luchman, & Haynes, 2009). Therefore, we wanted to control for such variables that might explain why managers high in surface acting experience more thwarting and less satisfaction of their psychological needs, and why they are less satisfied and engaged. Consequently, we controlled for negative orientations in the form of pessimism (i.e., a cynical attitude about events) assessed with four items drawn from Wanous, Reichers, and Austin (2000), as well as gender and age in all models (M2–M6). More specifically, each of these control variables were allowed to covary with each other and with all indicators at T1, and were related to each indicator at T2 through direct paths. These links were specified in all subsequent analyses.

In line with our hypotheses, we tested our proposed model (M2) by including unidirectional paths between surface acting at T1 and all other variables at T2 (i.e., T2 need satisfaction, T2 need thwarting, T2 work engagement, T2 job satisfaction). Unidirectional paths were also specified between need satisfaction at T1 and outcomes at T2 (i.e., T2 work engagement and T2 job satisfaction), as well as between need thwarting at T1 and both outcomes at T2. This model (M2) presented satisfactory fit to the data and showed a better fit than the stability model (M3), as indicated by M2's lower value on the AIC, and by a significant χ^2 difference between M2 and M3 (see Table 2). The stability model (M3) only included unidirectional paths between each latent variable at T1 and its corresponding variable at T2 (i.e., no cross-lagged effects were specified). A reversed causation model (M4) was also tested and included unidirectional links between both T1 need satisfaction and thwarting and T2 surface acting. Two unidirectional paths
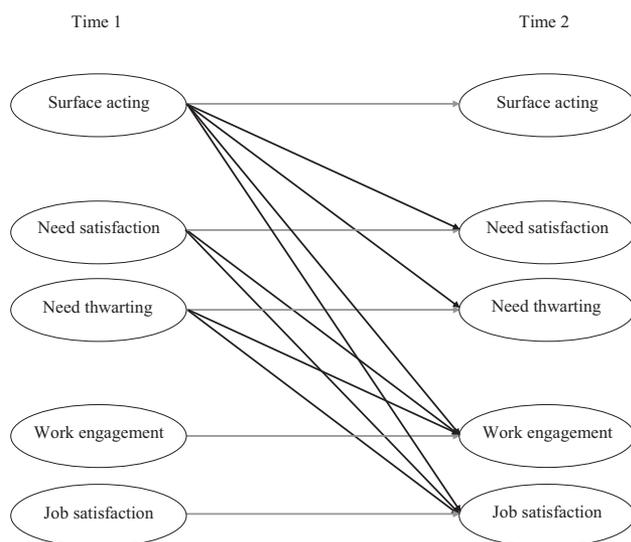
were also specified between work engagement at T1 and both need satisfaction and thwarting at T2, as well as between job satisfaction at T1 and both need satisfaction and thwarting at T2. Results from this reversed causation model (M4) indicated that most associations were nonsignificant ($p > .05$), with the exception of the link between T1 job satisfaction and T2 need satisfaction ($\beta = .31$, $p < .05$). In addition, as indicated by the comparison of AIC values and by the significance of the χ^2 difference test between M2 and M4, the proposed model (M2) provided a significantly better fit than this reversed causation model (M4; see Table 2).

The reciprocity model (M5) was a combination of M2 and M4 as it assessed the mutual influence of latent variables over time. More specifically, this model included bidirectional links between surface acting and both need satisfaction and thwarting, between need satisfaction and both work engagement and job satisfaction, and between need thwarting and both outcomes. Just as in M4, reversed links were not significant, with the exception of the links between T1 need thwarting and T2 surface acting ($\beta = -.23$, $p < .05$) and between T1 job satisfaction and T2 need satisfaction ($\beta = .24$, $p < .05$). Although M5 presented better fit to the data than M4, as indicated by M5's lower value on the AIC and by a significant χ^2 difference between M4 and M5, it did not offer improvement over the proposed model (M2) (see Table 2). Finally, an alternative model (M6) was tested to assess a potential full mediation. It included unidirectional paths between surface acting at T1 and both need satisfaction and need thwarting at T2. Unidirectional paths were also specified between need satisfaction at T1 and outcomes at T2 (i.e., T2 work engagement and T2 job satisfaction), as well as between need thwarting at T1 and both outcomes at T2. Once again, as indicated by its higher AIC value and by the significance of the χ^2 difference test between M2 and M6, the proposed model (M2) provided a better fit than this alternative model (M6; see Table 2).

In sum, although all competing models provided an adequate fit to the data, results revealed that the proposed model (M2) offered the best fitting solution. In this model, each latent variable at T1 was significantly and positively related to its corresponding variable at T2 (βs ranging from .52 to .82, $p < .001$), which suggested that the measured constructs were relatively stable over time. Even though the variance in latent variables at T2 was largely explained by the influence of their corresponding variables at T1, a significant part of variance was still explained by other constructs. Surface acting at T1 negatively influenced T2 work engagement ($\beta = -.15$, $p < .05$), and T2 job satisfaction ($\beta = -.16$, $p < .05$), thus confirming Hypothesis 1. Additionally, Hypothesis 2 was supported as surface acting at T1 positively predicted T2 need thwarting ($\beta = .19$, $p < .01$), yet it negatively predicted T2 need satisfaction ($\beta = -.15$, $p < .05$), therefore confirming Hypothesis 3. Need satisfaction at T1 also significantly and positively predicted both T2 work engagement ($\beta = .18$, $p < .05$) and T2 job satisfaction ($\beta = .19$, $p < .05$). However, need thwarting did not significantly predict T2 work engagement ($\beta = .07$, $p = .36$) and T2 job satisfaction ($\beta = .08$, $p = .23$; see Figure 2). With regards to controlled variables (i.e., pessimism, gender, and age), most links were not significant, with the exception of the links between age and T2 need thwarting ($\beta = -.12$, $p < .01$), T2 job satisfaction ($\beta = .09$, $p < .05$), and T2 work engagement ($\beta = .08$, $p < .05$).
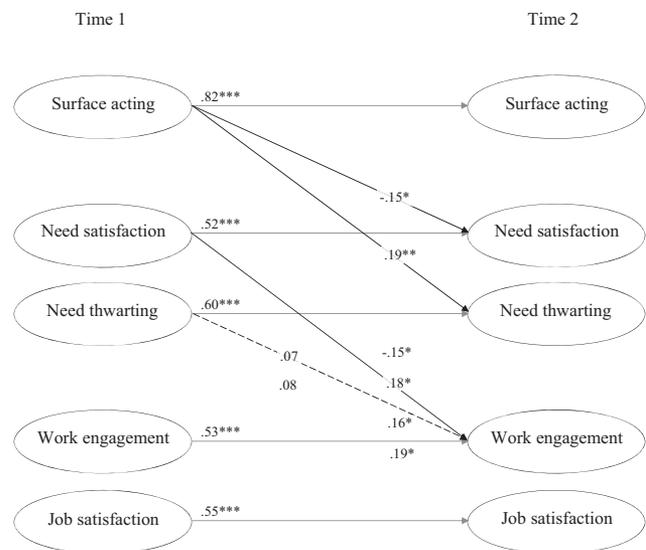

Figure 2. The final model. For clarity purposes, covariances and links with controlled variables are not presented. Dashed lines indicate nonsignificant links. * $p < .05$. * $p < .01$. *** $p < .001$.

Bootstrapping analyses were then conducted to analyze more precisely the mediating role of T2 psychological need satisfaction in the relationship between T1 surface acting and both T2 work engagement and T2 job satisfaction, in line with previous research (Trépanier, Fernet, & Austin, 2015). This empirical approach indeed supports SDT's conceptual rationale that the environment—or in our study's case, surface acting as implied by an environmental constraint—influences individuals' psychological resources (i.e., psychological needs) which in turn are associated with people's functioning. Moreover, whereas previous research demonstrated longitudinal effects of surface acting on employee functioning, we believe the added value of our research lies in its demonstration of the temporal effects of surface acting on need satisfaction and thwarting, which was never demonstrated before, either cross-sectionally or longitudinally.

More generally, the bootstrapping method is recommended by scholars to confirm indirect effects (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2008). Indeed, authors argue that in finite samples, the total indirect effect is rarely normal and propose this problem to be addressed through bootstrapping methods. Indeed, "bootstrapping provides the most powerful and reasonable method of obtaining confidence limits for specific indirect effects under most conditions" (Preacher & Hayes, 2008, p. 886). Moreover, this method has largely been used in previous studies to confirm such mediational effects (e.g., Zhang, Walumbwa, Aryee, & Chen, 2013) including in two waves longitudinal designs as in the present study (e.g., Siltaloppi, Kinnunen, Feldt, & Tolvanen, 2012; Trépanier, Fernet, & Austin, 2015). The indirect effects were tested with 90% confidence intervals computed from 1000 bootstrap samples. Results indicated significant indirect effects of T1 surface acting on both T2 work engagement ($\beta = -.097$, CI [$-.207$ to $-.018$], $p < .05$) and T2 job satisfaction ($\beta = -.117$, CI [$-.238$ to $-.018$], $p < .05$), through T2 need satisfaction. Hypothesis 4 was thus partially supported as need satisfaction did partially mediate the influence of surface acting on work satisfac-

tion and engagement, but need thwarting did not play such a mediating role.

Discussion

Based on SDT (Deci & Ryan, 2000), this study aimed to examine the influence of surface acting on work engagement and job satisfaction in managers working in health care centers, and to analyze the mediating role of psychological need satisfaction and thwarting in these relationships. More specifically, we expected surface acting to negatively predict supervisors' job satisfaction and work engagement over time. Additionally, we assumed surface acting would negatively predict psychological need satisfaction, which would in turn positively influence job satisfaction and work engagement. We also supposed that surface acting would positively predict psychological need thwarting which would, in turn, negatively influence job satisfaction and work engagement.

Altogether, results partially confirmed our hypotheses. As a matter of fact, results showed that surface acting significantly and negatively predicted both work engagement and job satisfaction, thus confirming Hypothesis 1. Moreover, surface acting significantly and negatively predicted need satisfaction, and significantly and positively influenced need thwarting, which provided support for Hypotheses 2 and 3. Finally, Hypothesis 4 was partially confirmed as results showed that need satisfaction significantly and partially mediated the influence of surface acting on both work engagement and job satisfaction, but they did not provide support for the mediating role of need thwarting.

Theoretical Contributions

Overall, our study contributes to a better understanding of the influence of surface acting on employee functioning. As a matter of fact, the adverse effects of surface acting on job satisfaction were well-documented through cross-sectional studies (e.g., Chen et al., 2012; Cheung & Lun, 2015), whereas its effects on work engagement were, to the best of our knowledge, never addressed. Our study offers longitudinal evidence for the effects of surface acting on both job satisfaction and work engagement. More specifically, by controlling for T1 levels of need satisfaction and thwarting, as well as T1 job satisfaction and work engagement, the cross-lagged method allows us to show that changes in all of these dimensions from T1 to T2 are predicted by T1 surface acting.

Additionally, our research showed such longitudinal evidence in a specific population (i.e., supervisors). Whereas previous studies focused on the implications of leaders' emotional labor (e.g., Humphrey et al., 2008), the current paper gives unique evidence by investigating surface acting in a specific sample of managers, whom we believe are particularly concerned with emotional work requirements. For instance, managers in the health care industry have to show positive emotions when implementing and encouraging new practices they do not necessarily believe in, they also have to keep a positive attitude when facing their subordinates' negative emotional displays. Unlike previous research that found surface acting to have no significant influence on managers' functioning six months later (Arnold et al., 2015), our results indicate that surface acting does have a longitudinal effect on their attitudes in a shorter time span (i.e., three months). Our results therefore confirm previous findings among service workers, showing shorter

term longitudinal effects of emotional labor on positive outcomes over the course of four weeks (Côté & Morgan, 2002) and two months (Hülsheger et al., 2010). One could assume that when managers have to engage in emotional labor for a longer period of time (e.g., six months), this enduring demand might no longer impair their optimal functioning, but instead it could directly generate adverse negative outcomes in terms of maladaptive functioning such as burnout (Philipp & Schüpbach, 2010) or turnover (Chau, Dahling, Levy, & Diefendorff, 2009). More generally, in a context where research on emotional labor has mostly addressed its effects in a cross-sectional manner, this paper answers scholars' call to enrich the literature on how surface acting obstructs optimal functioning over time (Hülsheger & Schewe, 2011).

More specifically, the present study goes beyond prior work that proposed theoretical mechanisms underlying such detrimental effects (e.g., Hülsheger et al., 2011) by offering an empirical test of previously suggested mechanisms (Grandey et al., 2015) and by showing their longitudinal relevance. Our results indeed underscore the important role of psychological need satisfaction in explaining this detrimental process, and by doing so contribute to previous research on the importance of these needs with regards to surface acting (e.g., Pugh et al., 2011). Specifically, our results show that the satisfaction of these needs explains *how* the negative effects of surface acting can occur. Surface acting entails being compelled to repress one's authentic emotions, maintaining relations based on a social mask, and sensing that one's emotions are considered inadequate for the job, which respectively makes managers feel less volitional, competent, and connected to others. In turn, this lower satisfaction of their psychological needs explains a decrease in supervisors' job satisfaction and work engagement. As a matter of fact, because their job precludes the satisfaction of their psychological needs, they assess it in a less positive light and are less prone to devote their energy to their professional activity, which, by not supporting their authenticity (Ashforth & Humphrey, 1993), does not contribute to their personal growth (Deci & Ryan, 2008; Van den Broeck et al., 2008). Worth noting is that the significant effects demonstrated in the present research were observed while controlling for potentially predictive dispositional variables (i.e., pessimism, age, gender) of surface acting, psychological needs, and optimal functioning. By ruling out such alternative explanation of the demonstrated effects, we confirm that the proposed model is a strong fit to explain the effects of surface acting on managers' positive attitudes.

Yet, against our expectations, this research did not support the mediating role of psychological need thwarting in the relationship between surface acting and managers' optimal functioning. Surface acting did positively predict psychological need thwarting, which suggests that having to fake or hide their emotions as part of their job leads supervisors to experience an intense negative psychological experience wherein they feel oppressed (i.e., they are forced to be inauthentic), rejected (i.e., they are not accepted for who they really are), and incompetent (i.e., their genuine emotions are judged worthless). Yet, unlike need satisfaction, this frustrating psychological experience did not in turn significantly predict managers' positive attitudes. One could argue that the experience of need thwarting is so intensely threatening to individuals' integrity and so acute that it does not even tap into their positive attitudes but rapidly triggers more severe negative consequences (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011). Fur-

ther research could thus investigate the influence of surface acting on negative indicators through the thwarting of psychological needs, to confirm the significant effects of this psychological experience on negative outcomes (e.g., psychological distress, anxiety, depressive symptoms), while controlling for the effects of need satisfaction.

More generally, the present findings make several contributions to SDT (Deci & Ryan, 2000, 2008). First, even though the mediating role of need satisfaction has been well documented in the work domain, most studies examined it in a cross-sectional manner (e.g., Olafsen, Halvari, Forest, & Deci, 2015; Trépanier et al., 2013). Similarly, the role of psychological need thwarting has scarcely been investigated in the professional context (e.g., Bartholomew et al., 2014), even less so in a longitudinal manner. Therefore, our study contributes to a better understanding of the role of need satisfaction and thwarting in explaining the effects of surface acting on individual optimal functioning over time. Second, we emphasize that need satisfaction positively influences managers' positive attitudes over time, while controlling for the effects of need thwarting. This, to the best of our knowledge, had never been demonstrated before. Indeed, this research confirms the previously demonstrated longitudinal effects of need satisfaction on nurses' functioning (Trépanier, Fernet, & Austin, 2015) and extends these findings to a sample of supervisors. However, simultaneous investigations of psychological need satisfaction and thwarting remain scarce in the work domain (e.g., Trépanier, Forest, et al., 2015), even more so in a longitudinal manner (e.g., Trépanier et al., 2016). Thus, our study builds on previous research to confirm that these psychological mechanisms are two different constructs, referring to two different psychological experiences with distinct consequences (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011, Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011).

Study Limitations

Although it contributes to a better understanding of surface acting's adverse effects on employee optimal functioning over time, and highlights the psychological mechanisms involved in this process, the present study still has some limitations. First, this research only examined how surface acting influenced supervisors' positive attitudes over time, and did not include negative indicators. By including negative indicators, further research could provide a more complete comprehension of workers' functioning. Second, we only focused on the *dedication* dimension of work engagement (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Even though dedication is a key component of work engagement (Langelaan et al., 2006; Schaufeli & Bakker, 2004), when it is studied apart from vigor and absorption, there might be a conceptual overlap with other constructs such as job involvement (Lodahl & Kejner, 1965) or professional identity (Walsh & Gordon, 2008). It would thus be interesting to study all three dimensions of work engagement to avoid any conceptual confusion. Moreover, vigor seems like an important component to considerate for managers, given their many challenging duties, including their mission to motivate others. Therefore, including other dimensions of work engagement would allow to gain a more accurate grasp of the overall experience of work engagement (Schaufeli et al., 2002). Similarly, research underscores the existence of more emotional

labor strategies than just surface acting and it would be fruitful to investigate whether the demonstrated mechanisms also allow to explain the longitudinal effects of deep acting and expression of genuine emotions.

Third, this study only took interest in the processes through which surface acting influences supervisors' attitudes, yet it would be interesting to analyze how it may also affect their behaviors through peer-ratings or through the assessment of objective indicators. Future research could for instance investigate whether surface acting, by impeding attitudes through the satisfaction of their psychological needs, could in turn affect their behaviors (e.g., Chen et al., 2012; Geng et al., 2014) in the form of subordinates' assessments of their supervisors' managing skills or by considering performance indicators of the entity they supervise. Fourth, one should also note that the cross-lagged analyses we conducted reflected two measurement times. Even though this method offers advantages over the use of a cross-sectional method, resorting to three or four measurement times could offer a more precise evaluation of the observed mediations (Cole & Maxwell, 2003) by investigating how T1 surface acting predicts T2 psychological needs which in turn influence T3 optimal functioning. This would therefore allow for a better appreciation of the temporal relationships between the studied dimensions. Moreover, inherent to longitudinal designs is the attrition of participants between measurements times, which here conducted to our sample at T2 being made of people feeling more positively about their work experience than those at T1. One could wonder whether the same results would have been observed without this attrition of more negatively oriented people between T1 and T2.

Fifth, another limitation resides in our sample being made of supervisors with quite different professional duties. Even though surface acting is relevant to the management activity as a whole (Rajah et al., 2011), it could be fruitful to examine the effects of emotional labor for managers in medical contexts versus administrative or technical ones, the latter being less likely to be confronted with emotional demands as part of their job. Indeed, supervisors who manage a medical or paramedical crew are subjected to both internal (i.e., subordinates, general management) and external (i.e., patients, families) emotional demands (Grandey et al., 2007), whereas those supervising a technical team are less likely to be submitted to external emotional demands. Thus, future research could investigate whether managers' specific activity moderates the effects of surface acting on need satisfaction and thwarting. For instance, one could expect the effects of surface acting on need satisfaction and thwarting to be stronger in supervisors who manage medical/paramedical teams compared with those who supervise technical workers. Indeed, our data indicated that managers who manage medical or social workers (i.e., those who are confronted to internal and external emotional demands) significantly vary from their peers with regards to need satisfaction and thwarting, work engagement, and work satisfaction. These results therefore suggest a mediated moderation model could be tested in a larger sample.

Additionally, depending on their type of job, the focus of managers' emotion regulation might differ. Previous research among customer service workers mostly focused on clients as the source of their emotion regulation process, yet one could assume there is a broader range of sources of surface acting in managers (e.g., subordinates, clients, top management). It would therefore be

interesting to look into how the different kinds of events that can affect managers' emotions (Weiss & Cropanzano, 1996) may yield to different effects. For instance, Grandey et al. (2007) found that employees who were highly expected to perform emotional labor were particularly concerned with verbal abuse from customers but they were not more likely than others to report verbal abuse from their supervisors or coworkers. Moreover, authors showed that customer verbal abuse contributed to ill-being beyond supervisor or coworker verbal abuse. These results therefore suggest that all sources of emotional labor are not equal, and it would be interesting to explore whether such findings are replicated in managers. In line with this, future research could investigate how different sources of surface acting might be more likely to satisfy or thwart managers' psychological needs. Indeed, depending on whether they engage in surface acting to deal with an occasional difficult client or on a regular basis because top management requires them to work in ways that they do not feel congruent with, managers' experiences of need satisfaction and/or thwarting might vary. As a matter of fact, research suggests that politely interacting with clients is part of one's core job performance (Grandey et al., 2007), it might as such lead to less need satisfaction. However, being asked to act in opposition with one's own values and belief on a daily basis might be more of an aversive psychological experience, actively putting the self at risk, and therefore leading to more need thwarting.

Finally, as our goal was to explore the psychological mechanisms involved in explaining the adverse effects of surface acting on managers' optimal functioning, we did not focus on the antecedents of surface acting. Research on the predictors of emotional labor has underscored the importance of personality traits, work motives or customer/patient-related emotional events (for a review, see Grandey & Gabriel, 2015). However, little attention has been paid to other environmental factors that might determine the use of emotion regulation strategies. Therefore, further studies could look into those factors that might prevent managers from engaging in surface acting. For instance, one could assume that the quality of their relationships with coworkers and subordinates (i.e., support vs. conflict) might influence their use of surface acting and give leverage to reduce their resorting to this detrimental emotion regulation strategy.

Implications for Practice

Our study offers some valuable implications for organizations and supervisors. On the whole, this research offered to examine the effects of surface acting on managers' optimal functioning for its own sake, as opposed to studying it as a mean to explain subordinates' satisfaction or organizational performance (Glasø & Einarsen, 2008; Humphrey et al., 2008). As a matter of fact, managers are frequently called upon to promote their subordinates' psychological health, yet their own functioning is not so frequently the center of attention. The present paper thus suggested some new directions to promote supervisors' positive attitudes. Our findings indeed advocate that organizations support their managers in identifying healthy ways to articulate their authentic emotions, instead of engaging in surface acting (Grandey et al., 2015) which has detrimental effects on the satisfaction of their psychological needs and positive attitudes over time. For instance, previous research showed that providing employees with mindfulness-based inter-

ventions (i.e., meditation exercises focusing on daily awareness of automatic patterns of thinking, reacting, and feeling) allowed them to diminish their use of surface acting and to use healthier strategies to deal with emotional job demands instead, which in turn reduced their ill-being (Hülsheger, Alberts, Feinholdt, & Lang, 2013). Moreover, organizations and practitioners could develop focus groups specifically dedicated to supervisors, so that they collectively identify compromises to allow them to display their genuine emotions while satisfying occupational or organizational norms (i.e., emotional display rules; Ashforth & Humphrey, 1993). These groups would also allow managers to support each other. As a matter of fact, mutual support was shown to mitigate the adverse effects of emotional demands on workers' psychological health and performance (de Jonge, le Blanc, Peeters, & Noordam, 2008).

In conclusion, this study encourages practitioners and organizations to reduce managers' use of surface acting, as this form of emotional labor threatens their human needs, to promote their optimal functioning over time.

References

Adams, G. A., & Webster, J. R. (2013). Emotional regulation as a mediator between interpersonal mistreatment and distress. *European Journal of Work and Organizational Psychology, 22,* 697–710. http://dx.doi.org/10.1080/1359432X.2012.698057

Arnold, K. A., Connelly, C. E., Walsh, M. M., & Ginis, K. A. (2015). Leadership styles, emotion regulation, and burnout. *Journal of Occupational Health Psychology, 20,* 481–490. http://dx.doi.org/10.1037/a0039045

Ashforth, B. E., & Humphrey, R. H. (1993). Emotional labor in service roles: The influence of identity. *The Academy of Management Review, 18,* 88–115.

Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2003). Dual processes at work in a call centre: An application of the Job Demands-Resources model. *European Journal of Work and Organizational Psychology, 12,* 393–417. http://dx.doi.org/10.1080/13594320344000165

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress, 22,* 187–200. http://dx.doi.org/10.1080/02678370802393649

Bakker, A. B., Westman, M., & van Emmerik, I. J. H. (2009). Advancements in crossover theory. *Journal of Managerial Psychology, 24,* 206–219. http://dx.doi.org/10.1108/02683940910939304

Bartholomew, K. J., Ntoumanis, N., Cuevas, R., & Lonsdale, C. (2014). Job pressure and ill-health in physical education teachers: The mediating role of psychological need thwarting. *Teaching and Teacher Education, 37,* 101–107. http://dx.doi.org/10.1016/j.tate.2013.10.006

Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., Bosch, J. A., & Thøgersen-Ntoumani, C. (2011). Self-determination theory and diminished functioning: The role of interpersonal control and psychological need thwarting. *Personality and Social Psychology Bulletin, 37,* 1459–1473. http://dx.doi.org/10.1177/0146167211413125

Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., & Thøgersen-Ntoumani, C. (2011). Psychological need thwarting in the sport context: Assessing the darker side of athletic experience. *Journal of Sport & Exercise Psychology, 33,* 75–102. http://dx.doi.org/10.1123/jsep.33.1.75

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117,* 497–529. http://dx.doi.org/10.1037/0033-2909.117.3.497

Berkman, L. F., Liu, S. Y., Hammer, L., Moen, P., Klein, L. C., Kelly, E., . . . Buxton, O. M. (2015). Work-family conflict, cardiometabolic risk,

and sleep duration in nursing employees. *Journal of Occupational Health Psychology, 20,* 420–433. http://dx.doi.org/10.1037/a0039143

Blais, M. R., Vallerand, R. J., Pelletier, L. G., & Brière, N. M. (1989). L'Échelle de satisfaction de vie: Validation canadienne-française du "Satisfaction with Life Scale" [The satisfaction scale: Canadian-French validation of the Satisfaction with Life Scale]. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement, 21,* 210–223. http://dx.doi.org/10.1037/h0079854

Blau, P. M. (1964). *Exchange and power in social life.* New York, NY: Wiley.

Bollen, K. A., & Curran, P. J. (2004). Autoregressive latent trajectory (ALT) models: A synthesis of two traditions. *Sociological Methods & Research, 32,* 336–383. http://dx.doi.org/10.1177/0049124103260222

Bozdogan, H., & Ramirez, D. E. (1987). An expert model selection approach to determine the "best" pattern structure in factor analysis models. In H. Bozdogan & A. K. Gupta (Eds.), *Multivariate statistical modeling and data analysis* (pp. 35–60). Houten, the Netherlands: Springer. http://dx.doi.org/10.1007/978-94-009-3977-6_3

Brislin, R. W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of cross-cultural psychology* (Vol. 2, pp. 389–444). Boston, MA: Allyn & Bacon.

Brotheridge, C. M., & Grandey, A. A. (2002). Emotional labor and burnout: Comparing two perspectives of "people work". *Journal of Vocational Behavior, 60,* 17–39. http://dx.doi.org/10.1006/jvbe.2001.1815

Brotheridge, C. M., & Lee, R. T. (2003). Development and validation of the Emotional Labour Scale. *Journal of Occupational and Organizational Psychology, 76,* 365–379. http://dx.doi.org/10.1348/096317903769647229

Buchan, J., & Calman, L. (2004). *The global shortage of registered nurses: An overview of issues and actions.* Geneva, Switzerland: International Council of Nurses.

Caza, A., Zhang, G., Wang, L., & Bai, Y. (2015). How do you really feel? Effect of leaders' perceived emotional sincerity on followers' trust. *The Leadership Quarterly, 26,* 518–531. http://dx.doi.org/10.1016/j.leaqua.2015.05.008

Chau, S. L., Dahling, J. J., Levy, P. E., & Diefendorff, J. M. (2009). A predictive study of emotional labor and turnover. *Journal of Organizational Behavior, 30,* 1151–1163. http://dx.doi.org/10.1002/job.617

Chen, Z., Sun, H., Lam, W., Hu, Q., Huo, Y., & Zhong, J. A. (2012). Chinese hotel employees in the smiling masks: Roles of job satisfaction, burnout, and supervisory support in relationships between emotional labor and performance. *The International Journal of Human Resource Management, 23,* 826–845. http://dx.doi.org/10.1080/09585192.2011.579918

Cheung, F., & Lun, V. M.-C. (2015). Emotional labor and occupational well-being: A latent profile analytic approach. *Journal of Individual Differences, 36,* 30–37. http://dx.doi.org/10.1027/1614-0001/a000152

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112,* 558–577. http://dx.doi.org/10.1037/0021-843X.112.4.558

Cossette, M. (2014). Emotional labor through the lens of SDT. In M. Gagné (Ed.), *The Oxford handbook of work engagement, motivation, and self-determination theory.* New York, NY: Oxford University Press.

Cossette, M., & Hess, U. (2012). Emotion regulation strategies among customer service employees: A motivational approach. In N. M. Ashkanasy, C. E. Härtel & W. J. Zerbe (Eds.), *Research on emotion in organizations: Experiencing and managing emotions in the workplace* (Vol. 8, pp. 329–352). Bingley, UK: Emerald Publishing Group. http://dx.doi.org/10.1108/S1746-9791(2012)0000008017

Côté, S. (2005). A social interaction model of the effects of emotion regulation on work strain. *The Academy of Management Review, 30,* 509–530. http://dx.doi.org/10.5465/AMR.2005.17293692

Côté, S., & Morgan, L. (2002). A longitudinal analysis of the association between emotion regulation, job satisfaction, and intentions to quit. *Journal of Organizational Behavior, 23,* 947–962. http://dx.doi.org/10.1002/job.174

Cuevas, R., Sánchez-Oliva, D., Bartholomew, K. J., Ntoumanis, N., & García-Calvo, T. (2015). Adaptation and validation of the psychological need thwarting scale in Spanish physical education teachers. *The Spanish Journal of Psychology, 18,* E53. http://dx.doi.org/10.1017/sjp.2015.56

DeCharms, R. (1968). *Personal causation; the internal affective determinants of behavior.* New York, NY: Academic Press.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11,* 227–268. http://dx.doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macro theory of human motivation, development, and health. *Canadian Psychology/Psychologie canadienne, 49,* 182–185. http://dx.doi.org/10.1037/a0012801

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory in health care and its relations to motivational interviewing: A few comments. *The International Journal of Behavioral Nutrition and Physical Activity, 9,* 24. http://dx.doi.org/10.1186/1479-5868-9-24

de Jonge, J., Le Blanc, P. M., Peeters, M. C., & Noordam, H. (2008). Emotional job demands and the role of matching job resources: A cross-sectional survey study among health care workers. *International Journal of Nursing Studies, 45,* 1460–1469. http://dx.doi.org/10.1016/j.ijnurstu.2007.11.002

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49,* 71–75. http://dx.doi.org/10.1207/s15327752jpa4901_13

Duke, A. B., Goodman, J. M., Treadway, D. C., & Breland, J. W. (2009). Perceived organizational support as a moderator of emotional labor/outcomes relationships. *Journal of Applied Social Psychology, 39,* 1013–1034. http://dx.doi.org/10.1111/j.1559-1816.2009.00470.x

English, T., & John, O. P. (2013). Understanding the social effects of emotion regulation: The mediating role of authenticity for individual differences in suppression. *Emotion, 13,* 314–329. http://dx.doi.org/10.1037/a0029847

Fernet, C., Austin, S., Trépanier, S.-G., & Dussault, M. (2013). How do job characteristics contribute to burnout? Exploring the distinct mediating roles of perceived autonomy, competence, and relatedness. *European Journal of Work and Organizational Psychology, 22,* 123–137. http://dx.doi.org/10.1080/1359432X.2011.632161

Fisk, G. M., & Friesen, J. P. (2012). Perceptions of leader emotion regulation and LMX as predictors of followers' job satisfaction and organizational citizenship behaviors. *The Leadership Quarterly, 23,* 1–12. http://dx.doi.org/10.1016/j.leaqua.2011.11.001

Frost, P. J. (2004). Handling toxic emotions: New challenges for leaders and their organization. *Organizational Dynamics, 33,* 111–127. http://dx.doi.org/10.1016/j.orgdyn.2004.01.001

Gabriel, A. S., Daniels, M. A., Diefendorff, J. M., & Greguras, G. J. (2015). Emotional labor actors: A latent profile analysis of emotional labor strategies. *Journal of Applied Psychology, 100,* 863–879. http://dx.doi.org/10.1037/a0037408

Gardner, W. L., Fischer, D., & Hunt, J. G. (2009). Emotional labor and leadership: A threat to authenticity? *The Leadership Quarterly, 20,* 466–482. http://dx.doi.org/10.1016/j.leaqua.2009.03.011

Geng, Z., Liu, C., Liu, X., & Feng, J. (2014). The effects of emotional labor on frontline employee creativity. *International Journal of Contemporary Hospitality Management, 26,* 1046–1064. http://dx.doi.org/10.1108/IJCHM-12-2012-0244

Gillet, N., Forest, J., Benabou, C., & Bentein, K. (2015). The effects of organizational factors, psychological need satisfaction and thwarting, and affective commitment on workers' well-being and turnover inten-

tions. *Le Travail Humain: A Bilingual and Multi-Disciplinary Journal in Human Factors, 78,* 119–140. http://dx.doi.org/10.3917/th.782.0119

Gillet, N., Fouquereau, E., Forest, J., Brunault, P., & Colombat, P. (2012). The impact of organizational factors on psychological needs and their relations with well-being. *Journal of Business and Psychology, 27,* 437–450. http://dx.doi.org/10.1007/s10869-011-9253-2

Gillet, N., Fouquereau, E., Huyghebaert, T., & Colombat, P. (2016). Effets du soutien organisationnel perçu et des caractéristiques de l'emploi sur l'anxiété au travail et l'épuisement professionnel: Le rôle médiateur de la satisfaction des besoins psychologiques [Effects of perceived organizational support and job characteristics on job anxiety and burnout: The mediating role of psychological need satisfaction]. *Psychologie Française, 61,* 73–81. http://dx.doi.org/10.1016/j.psfr.2014.05.004

Gillet, N., Fouquereau, E., Lequeurre, J., Bigot, L., & Mokounokolo, R. (2012). Validation d'une échelle de frustration des besoins psychologiques au travail (EFBPT) [Validation of a scale to measure psychological need thwarting at work (EFBPT)]. *Psychologie du Travail et des Organisations, 18,* 328–344. http://dx.doi.org/10.1016/S1420-2530(16)30074-7

Gillet, N., Rosnet, E., & Vallerand, R. J. (2008). Développement d'une échelle de satisfaction des besoins fondamentaux en contexte sportif [Development of a scale of satisfaction of the fundamental requirements in sporting context]. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement, 40,* 230–237. http://dx.doi.org/10.1037/a0013201

Glasø, L., & Einarsen, S. (2008). Emotional regulation in leader–follower relationships. *European Journal of Work and Organizational Psychology, 17,* 482–500. http://dx.doi.org/10.1080/13594320801994960

Goldberg, L. S., & Grandey, A. A. (2007). Display rules versus display autonomy: Emotion regulation, emotional exhaustion, and task performance in a call center simulation. *Journal of Occupational Health Psychology, 12,* 301–318. http://dx.doi.org/10.1037/1076-8998.12.3.301

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review, 25,* 161. http://dx.doi.org/10.2307/2092623

Grandey, A. A. (2000). Emotion regulation in the workplace: A new way to conceptualize emotional labor. *Journal of Occupational Health Psychology, 5,* 95–110. http://dx.doi.org/10.1037/1076-8998.5.1.95

Grandey, A. A. (2003). When "the show must go on": Surface acting and deep acting as determinants of emotional exhaustion and peer-rated service delivery. *Academy of Management Journal, 46,* 86–96. http://dx.doi.org/10.2307/30040678

Grandey, A. A., Fisk, G. M., & Steiner, D. D. (2005). Must "service with a smile" be stressful? The moderating role of personal control for American and French employees. *Journal of Applied Psychology, 90,* 893–904. http://dx.doi.org/10.1037/0021-9010.90.5.893

Grandey, A., & Gabriel, A. (2015). Emotional labor at a crossroads: Where do we go from here? *Annual Review of Organizational Psychology and Organizational Behavior, 2,* 323–349. http://dx.doi.org/10.1146/annurev-orgpsych-032414-111400

Grandey, A. A., Kern, J. H., & Frone, M. R. (2007). Verbal abuse from outsiders versus insiders: Comparing frequency, impact on emotional exhaustion, and the role of emotional labor. *Journal of Occupational Health Psychology, 12,* 63–79. http://dx.doi.org/10.1037/1076-8998.12.1.63

Grandey, A. A., Rupp, D., & Brice, W. N. (2015). Emotional labor threatens decent work: A proposal to eradicate emotional display rules. *Journal of Organizational Behavior, 36,* 770–785. http://dx.doi.org/10.1002/job.2020

Heider, F. (1946). Attitudes and cognitive organization. *The Journal of Psychology: Interdisciplinary and Applied, 21,* 107–112. http://dx.doi.org/10.1080/00223980.1946.9917275

Hetland, J., Hetland, H., Bakker, A. B., Demerouti, E., Andreassen, C. S., & Pallesen, S. (2015). Psychological need fulfillment as a mediator of

the relationship between transformational leadership and positive job attitudes. *The Career Development International, 20,* 464–481. http://dx.doi.org/10.1108/CDI-10-2014-0136

Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley, CA: University of California Press.

Hu, L.-T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3,* 424–453. http://dx.doi.org/10.1037/1082-989X.3.4.424

Hülsheger, U. R., Alberts, H. J. E. M., Feinholdt, A., & Lang, J. W. B. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *Journal of Applied Psychology, 98,* 310–325. http://dx.doi.org/10.1037/a0031313

Hülsheger, U. R., Lang, J. W., & Maier, G. W. (2010). Emotional labor, strain, and performance: Testing reciprocal relationships in a longitudinal panel study. *Journal of Occupational Health Psychology, 15,* 505–521. http://dx.doi.org/10.1037/a0021003

Hülsheger, U. R., & Schewe, A. F. (2011). On the costs and benefits of emotional labor: A meta-analysis of three decades of research. *Journal of Occupational Health Psychology, 16,* 361–389. http://dx.doi.org/10.1037/a0022876

Humphrey, R. H., Pollack, J. M., & Hawver, T. (2008). Leading with emotional labor. *Journal of Managerial Psychology, 23,* 151–168. http://dx.doi.org/10.1108/02683940810850790

Hyvönen, K., Feldt, T., Salmela-Aro, K., Kinnunen, U., & Mäkikangas, A. (2009). Young managers' drive to thrive: A personal work goal approach to burnout and work engagement. *Journal of Vocational Behavior, 75,* 183–196. http://dx.doi.org/10.1016/j.jvb.2009.04.002

Judge, T. A., Woolf, E. F., & Hurst, C. (2009). Is emotional labor more difficult for some than for others? A multi-level, experience sampling study. *Personnel Psychology, 62,* 57–88. http://dx.doi.org/10.1111/j.1744-6570.2008.01129.x

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33,* 692–724. http://dx.doi.org/10.2307/256287

Kahn, W. A. (2010). The essence of engagement: Lessons from the field. In S. Albrecht (Ed.), *The handbook of employee engagement: Models, measures and practices* (pp. 20–30). Cheltenham, UK: Elgar. http://dx.doi.org/10.4337/9781849806374.00008

Kammeyer-Mueller, J. D., Rubenstein, A. L., Long, D. M., Odio, M. A., Buckman, B. R., Zhang, Y., & Halvorsen-Ganepola, M. D. K. (2013). A meta-analytic structural model of dispositional affectivity and emotional labor. *Personnel Psychology, 66,* 47–90. http://dx.doi.org/10.1111/peps.12009

Kaplan, S., Bradley, J. C., Luchman, J. N., & Haynes, D. (2009). On the role of positive and negative affectivity in job performance: A meta-analytic investigation. *Journal of Applied Psychology, 94,* 162–176. http://dx.doi.org/10.1037/a0013115

Kinnunen, U., Feldt, T., & Mäkikangas, A. (2008). Testing the effort-reward imbalance model among Finnish managers: The role of perceived organizational support. *Journal of Occupational Health Psychology, 13,* 114–127. http://dx.doi.org/10.1037/1076-8998.13.2.114

Kovjanic, S., Schuh, S. C., Jonas, K., Van Quaquebeke, N., & Van Dick, R. (2012). How do transformational leaders foster positive employee outcomes? A self-determination-based analysis of employees' needs as mediating links. *Journal of Organizational Behavior, 33,* 1031–1052. http://dx.doi.org/10.1002/job.1771

Langelaan, S., Bakker, A. B., Van Doornen, L., & Schaufeli, W. B. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences, 40,* 521–532. http://dx.doi.org/10.1016/j.paid.2005.07.009

Lee, J., & Ok, C. M. (2014). Understanding hotel employees' service sabotage: Emotional labor perspective based on conservation of re-

sources theory. *International Journal of Hospitality Management, 36,* 176–187. http://dx.doi.org/10.1016/j.ijhm.2013.08.014

Lee, R. T., & Brotheridge, C. M. (2006, August). *Validation and extension of the Emotional Labor Scale: Evidence from day-care workers.* Paper presented at the International Conference on Emotions and Work– Life, Atlanta, GA.

Lee, R. T., Lovell, B. L., & Brotheridge, C. M. (2010). Tenderness and steadiness: Relating job and interpersonal demands and resources with burnout and physical symptoms of stress in Canadian physicians. *Journal of Applied Social Psychology, 40,* 2319–2342. http://dx.doi.org/10.1111/j.1559-1816.2010.00658.x

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9,* 151–173. http://dx.doi.org/10.1207/S15328007SEM0902_1

Little, T. D., Preacher, K. J., Selig, J. P., & Card, N. A. (2007). New developments in latent variable panel analyses of longitudinal data. *International Journal of Behavioral Development, 31,* 357–365. http://dx.doi.org/10.1177/0165025407077757

Lodahl, T. M., & Kejner, M. (1965). The definition and measurement of job involvement. *Journal of Applied Psychology, 49,* 24–33. http://dx.doi.org/10.1037/h0021692

MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39,* 99–128. http://dx.doi.org/10.1207/s15327906mbr3901_4

Marsh, H. W., Hau, K.-T., & Grayson, D. (2005). Goodness of fit evaluation in structural equation modeling. In A. Maydeu-Olivares & J. McArdle (Eds.), *Contemporary psychometrics: A Festschrift for Roderick P. McDonald. Mahwah,* NJ: Erlbaum.

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to cutoff values for fit indexes and dangers in overgeneralizing Hu & Bentler's (1999) findings. *Structural Equation Modeling, 11,* 320–341. http://dx.doi.org/10.1207/s15328007sem1103_2

Montgomery, A. J., Peeters, M. C. W., Schaufeli, W. B., & den Ouden, M. (2003). Work-home interference among newspaper managers: Its relationship with burnout and engagement. *Anxiety, Stress, & Coping, 16,* 195–211.

Netemeyer, R. G., Maxham, J. G., III, & Lichtenstein, D. R. (2010). Store manager performance and satisfaction: Effects on store employee performance and satisfaction, store customer satisfaction, and store customer spending growth. *Journal of Applied Psychology, 95,* 530–545. http://dx.doi.org/10.1037/a0017630

Newcombe, M. J., & Ashkanasy, N. M. (2002). The role of affect and affective congruence in perceptions of leaders: An experimental study. *The Leadership Quarterly, 13,* 601–614. http://dx.doi.org/10.1016/S1048-9843(02)00146-7

Olafsen, A. H., Halvari, H., Forest, J., & Deci, E. L. (2015). Show them the money? The role of pay, managerial need support, and justice in a self-determination theory model of intrinsic work motivation. *Scandinavian Journal of Psychology, 56,* 447–457. http://dx.doi.org/10.1111/sjop.12211

Philipp, A., & Schüpbach, H. (2010). Longitudinal effects of emotional labour on emotional exhaustion and dedication of teachers. *Journal of Occupational Health Psychology, 15,* 494–504. http://dx.doi.org/10.1037/a0021046

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40,* 879–891. http://dx.doi.org/10.3758/BRM.40.3.879

Pugh, S. D., Groth, M., & Hennig-Thurau, T. (2011). Willing and able to fake emotions: A closer examination of the link between emotional dissonance and employee well-being. *Journal of Applied Psychology, 96,* 377–390. http://dx.doi.org/10.1037/a0021395

Quested, E., Ntoumanis, N., Viladrich, C., Haug, E., Ommundsen, Y., Hoye, A. V., . . . Duda, J. L. (2013). Intentions to drop-out of youth soccer: A test of the basic needs theory among European youth from five countries. *International Journal of Sport and Exercise Psychology, 11,* 395–407. http://dx.doi.org/10.1080/1612197X.2013.830431

Rajah, R., Song, Z., & Arvey, R. D. (2011). Emotionality and leadership: Taking stock of the past decade of research. *The Leadership Quarterly, 22,* 1107–1119. http://dx.doi.org/10.1016/j.leaqua.2011.09.006

Ratelle, C. F., Larose, S., Guay, F., & Senécal, C. (2005). Perceptions of parental involvement and support as predictors of college students' persistence in a science curriculum. *Journal of Family Psychology, 19,* 286–293. http://dx.doi.org/10.1037/0893-3200.19.2.286

Rupp, D. E., McCance, A. S., & Grandey, A. A. (2007). A cognitive-emotional theory of customer injustice and emotional labor: Implications for customer service, fairness theory, and the multifoci perspective. In D. de Cremer (Ed.), *Advances in the psychology of justice and affect,* (pp. 205–232). Charlotte, NC: Information Age.

Saksvik, P. Ø., & Tvedt, S. D. (2009). Leading change in a healthy way. *Scandinavian Journal of Organizational Psychology, 1,* 20–28.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25,* 293–315. http://dx.doi.org/10.1002/job.248

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66,* 701–716. http://dx.doi.org/10.1177/0013164405282471

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3,* 71–92. http://dx.doi.org/10.1023/A:1015630930326

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research, 8,* 23–74.

Scott, B., & Barnes, C. M. (2011). A multilevel field investigation of emotional labor, affect, work withdrawal, and gender. *Academy of Management Journal, 54,* 116–136. http://dx.doi.org/10.5465/AMJ.2011.59215086

Siltaloppi, M., Kinnunen, U., Feldt, T., & Tolvanen, A. (2012). Development of need for recovery from work over one year: A person-centered approach. *Anxiety, Stress, & Coping, 25,* 23–42. http://dx.doi.org/10.1080/10615806.2010.540649

Sisley, R., & Smollan, R. (2012). Emotional labour and self-determination theory: A continuum of extrinsic and intrinsic causes of emotional expression and control. *New Zealand Journal of Employment Relations, 37,* 41–57.

Stebbings, J., Taylor, I. M., Spray, C. M., & Ntoumanis, N. (2012). Antecedents of perceived coach interpersonal behaviors: The coaching environment and coach psychological well- and ill-being. *Journal of Sport & Exercise Psychology, 34,* 481–502. http://dx.doi.org/10.1123/jsep.34.4.481

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). New York, NY: Allyn & Bacon.

Thibault Landry, A., Kindlein, J., Trépanier, S.-G., Forest, J., Zigarmi, D., Houson, D., & Brodbeck, F. C. (2016). Why individuals want money is what matters: Using self- determination theory to explain the differential relationship between motives for making money and employee psychological health. *Motivation and Emotion, 40,* 226–242. http://dx.doi.org/10.1007/s11031-015-9532-8

Trépanier, S.-G., Fernet, C., & Austin, S. (2013). Workplace bullying and psychological health at work: The mediating role of satisfaction of needs

for autonomy, competence and relatedness. *Work & Stress, 27,* 123–140. http://dx.doi.org/10.1080/02678373.2013.782158

Trépanier, S.-G., Fernet, C., & Austin, S. (2015). A longitudinal investigation of workplace bullying, basic need satisfaction, and employee functioning. *Journal of Occupational Health Psychology, 20,* 105–116. http://dx.doi.org/10.1037/a0037726

Trépanier, S. G., Fernet, C., & Austin, S. (2016). Longitudinal relationships between workplace bullying, basic psychological needs, and employee functioning: A simultaneous investigation of psychological need satisfaction and frustration. *European Journal of Work and Organizational Psychology, 25,* 690–706. http://dx.doi.org/10.1080/1359432X.2015.1132200

Trépanier, S.-G., Forest, J., Fernet, C., & Austin, S. (2015). On the psychological and motivational processes linking job characteristics to employee functioning: Insights from self-determination theory. *Work & Stress, 29,* 286–305. http://dx.doi.org/10.1080/02678373.2015.1074957

Trougakos, J. P., Beal, D. J., Cheng, B. H., Hideg, I., & Zweig, D. (2015). Too drained to help: A resource depletion perspective on daily interpersonal citizenship behaviors. *Journal of Applied Psychology, 100,* 227–236. http://dx.doi.org/10.1037/a0038082

Vallerand, R. J. (1989). Vers une méthodologie de validation transculturelle de questionnaires psychologiques: Implications pour la recherche en langue française [Toward a methodology for the transcultural validation of psychological questionnaires: Implications for research in the French language]. *Canadian Psychology/Psychologie canadienne, 30,* 662–680. http://dx.doi.org/10.1037/h0079856

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271–360). New York, NY: Academic Press. http://dx.doi.org/10.1016/S0065-2601(08)60019-2

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3,* 4–70. http://dx.doi.org/10.1177/109442810031002

Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work & Stress, 22,* 277–294. http://dx.doi.org/10.1080/02678370802393672

Van den Broeck, A., Vansteenkiste, M., De Witte, H., Soenens, B., & Lens, W. (2010). Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the Work-related Basic Need Satisfaction scale. *Journal of Occupational and Organizational Psychology, 83,* 981–1002. http://dx.doi.org/10.1348/096317909X481382

Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration, 23,* 263–280. http://dx.doi.org/10.1037/a0032359

Walsh, K., & Gordon, J. R. (2008). Creating an individual work identity. *Human Resource Management Review, 18,* 46–61. http://dx.doi.org/10.1016/j.hrmr.2007.09.001

Wanous, J. P., Reichers, A. E., & Austin, J. T. (2000). Cynicism about organizational change: Measurement, antecedents, and correlates. *Group & Organization Management, 25,* 132–153. http://dx.doi.org/10.1177/1059601100252003

Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs and affective experiences. *Human Resource Management Review, 12,* 173–194. http://dx.doi.org/10.1016/S1053-4822(02)00045-1

Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. L. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (Vol. 18, pp. 1–74). Greenwich, CT: JAI Press Inc.

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. (1977). Assessing reliability and stability in panel models. *Sociological Methodology, 8,* 84–136. http://dx.doi.org/10.2307/270754

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66,* 297–333. http://dx.doi.org/10.1037/h0040934

Yam, K. C., Fehr, R., Keng-Highberger, F. T., Klotz, A. C., & Reynolds, S. J. (2016). Out of control: A self-control perspective on the link between surface acting and abusive supervision. *Journal of Applied Psychology, 101,* 292–301. http://dx.doi.org/10.1037/apl0000043

Yang, F. H., & Chang, C. C. (2008). Emotional labour, job satisfaction and organizational commitment amongst clinical nurses: A questionnaire survey. *International Journal of Nursing Studies, 45,* 879–887. http://dx.doi.org/10.1016/j.ijnurstu.2007.02.001

Zhang, X., Walumbwa, F. O., Aryee, S., & Chen, Z. X. (2013). Ethical leadership, employee citizenship and work withdrawal behaviors: Examining mediating and moderating processes. *The Leadership Quarterly, 24,* 284–297. http://dx.doi.org/10.1016/j.leaqua.2012.11.008