Little things matter: a daily diary study of the within-person relationship between workplace incivility and work-related rumination

Tim VAHLE-HINZ[1]

[1]Department of Organizational, Business, and Social Psychology, Psychologische Hochschule Berlin, Germany

Abstract: Workplace incivility is a low-intensity, counterproductive work behavior associated with negative health outcomes and organizational consequences (e.g., turnover intention). In the present study, I used a daily diary design to investigate the short-term within-person effects of workplace incivility on work-related rumination. Time pressure was included in the present study to underline the importance of workplace incivility for off-work ruminative thoughts beyond the known effects of a stressful workday. Additionally, I propose mood at the end of the workday as a mediator for the proposed relationships. The results of my study corroborate the existence of the daily within-person and the more stable weekly between-person effect of workplace incivility on off-work ruminative thoughts. These results suggest that the experience of short-term and fluctuating workplace incivility has an impact on off-work ruminative thinking even when controlling for the known effects of time pressure. With regard to my proposed mediational effect, my hypothesis was not confirmed. In an additional analysis, however, mediation was confirmed when time pressure was excluded from the model. Further, the within-person relationship between time pressure and work-related rumination was mediated by mood.

Key words: Rumination, Workplace stressors, Rudeness, Recovery, Well-being

Introduction

Uncivil behavior in the workplace is typically rude and discourteous and shows a lack of respect[1]. Workplace incivility differs from other social stressors because of its low intensity and its ambiguous intent to harm[2]. Workplace incivility describes the minor negative encounters that can occur in day-to-day interactions. Although workplace incivility is low in intensity, previous research has shown that chronically experienced incivility in the workplace has

serious consequences for organizations and organizational members. For example, in a meta-analysis, Hershcovis[3] showed that workplace incivility is negatively related to job satisfaction, psychological and physical well-being, and affective commitment. Although workplace incivility can be seen as a daily hassle[4], surprisingly little research has investigated the short-term, within-person effects of workplace incivility[5–7]. Accordingly, little is known about the effects of occasionally experienced workplace incivility.

The aim of the present study is to gain insight into the relevance of daily workplace incivility for employees' well-being by addressing the within-person spillover effect of workplace incivility on off-work ruminative thoughts. To further underline the relevance of daily workplace incivility, I included time pressure into my study to test

To whom correspondence should be addressed.
E-mail: tim.vahle-hinz@hu-berlin.de

whether the assumed effect of workplace incivility on work-related rumination persists even after controlling for the known effects of time pressure. In addition to this main goal, I aim to gain insight into the process by which the experience of workplace incivility transfers into off-work ruminative thoughts. For this purpose, I analyze mood as a mediator of the relationship between daily workplace incivility and off-work ruminative thoughts. In the next section, I present a theoretical overview justifying these aims.

Aims of the Present Study

The first aim of the present study is to contribute to the literature by investigating whether daily experiences of workplace incivility have an important effect on the well-being of employees by disrupting the recovery process. According to the main theoretical models used in the literature on recovery, the effort-recovery model[8] and the conservation of resources theory[9], daily off-work time is important to restore strained resources and gain additional resources. Successful daily recovery is therefore important to effectively function in the workplace[10] and the prevention of illness[11].

Sonnentag and Fritz[12] recently introduced an integrative framework for recovery research that highlights the central role of mentally detaching from work during off-work hours for the relationship between workplace stressors and well-being. Ruminating about experiences at work during off-work hours disrupts the recovery process by preventing mental detachment form work and thus the restoration of strained resources[12, 13].

Spillover effects, meaning the relationship between experiences in the workplace and off-work well-being or behaviors, are central in recovery research[12, 14]. Thinking about work-related problems while at home (work-related rumination) is a central part of the relationship between workplace stressors and ill health[15]. Given the short-term effects of daily workplace incivility, it seems warranted to focus on the spillover effects of workplace incivility on off-work ruminative thoughts about work. Only the studies by Lim *et al.* and Nicholson and Griffin have investigated the spillover effect of workplace incivility on off-work outcomes[16, 17], and the study by Wang *et al.* has reported a spillover effect of customer mistreatment on rumination[18]. Therefore, the first aim of the present study builds on previous research which presented convincing evidence for the relationship between workplace stressors and detachment or rumination[12, 19–21], and adds daily

workplace incivility as an additional stressor. This first aim complements mainly the study by Wang *et al.* and the study by Nicholson and Griffin, who reported a daily spillover effect with similar constructs. However, my study differs from both studies as I simultaneously investigate the effect of time pressure on work-related rumination and in addition to the main effect, I also aim at investigating a mediation effect advancing our understanding as to why employees ruminate on days they have experienced incivility (see the second aim of the present study below).

In addition to workplace incivility, I also investigated the relationship between time pressure and work-related rumination. Although my main purpose is the investigation of the relationship between workplace incivility and work-related rumination, I deem it important to additionally include time pressure in my study. In addition to social stressors (e.g., workplace incivility), task-related stressors are impactful on employees' health and well-being[22, 23]. Time pressure is a common task-related stressor[24, 25] and is quite prominent in the occupational health psychology literature[26]. Additionally, time pressure has been shown to be related to work-related rumination at the between-[19] and within-person levels of analysis[20, 27]. Including time pressure into my study advances previous research on workplace incivility because I test whether the assumed effect of workplace incivility on work-related rumination persists even after controlling for the known effects of time pressure. For example, a study by Wang *et al.* that investigated the relationship between daily customer mistreatment and work-related rumination did not include other workplace stressors (such as time pressure) in their investigation[18]. Therefore, it remains unclear whether the effect of workplace incivility persists beyond the known effects of stressful working days on work-related rumination[20, 27]. In line with previous recommendations to give control variables the same treatment as effect variables[28, 29], I incorporated the relationship between time pressure and work-related rumination into my theory section.

The second aim of the present study is to investigate the process by which daily experienced workplace incivility is related to off-work ruminative thoughts. As one possible explanatory mechanism, I focus on mood experiences at the end of the workday. The theoretical reasoning for this assumption lies in the affective events theory[30] and the mood-as-information theory[31]. The affective events theory suggests that the relationship between an experienced event at work and subsequent behaviors is mediated by mood. Complementing this proposition, the

mood-as-information theory suggests that the experience of impaired mood offers information to the employee that the incivility event that was experienced represented poor treatment. Being treated poorly heightens the accessibility of the negative experience at work in one's memory, which then triggers ruminative thoughts in the evening. Based on these theoretical considerations, I propose that transferring the experience of workplace incivility into off-work ruminative thoughts can be explained by the negative effect of workplace incivility on mood. This is because workplace incivility impairs mood, which in turn heightens the accessibility of information regarding this negative event in one's memory and thus leads to off-work ruminative thoughts about work[18, 32]. Previous studies have mainly investigated rumination as a mediating factor[18, 19, 27, 33, 34]. In contrast to previous studies, I focus on mood as a mediator that initiates work-related rumination.

In the next sections, I hypothesize the effects of time pressure and workplace incivility on work-related rumination and introduce mood as a mediating factor. However, I start by shortly explaining the importance of work-related rumination as an outcome variable in studies on occupational stress.

Work-related Rumination

As the central outcome in my daily diary study, I focus on work-related rumination measured at the end of the day. Thinking about work-related problems while at home (work-related rumination) is a central part of the relationship between workplace stressors and ill health[12, 15].

Rumination about work can be defined as the repeated or chronic cognitive activation of stressful work experiences[13]. It is believed to have serious long-term consequences for psychological health[35] and to lead to counterproductive work behaviors[36]. Empirical studies support the idea that ruminating can trigger a psychological and physiological stress response even without the immediate presence of a stressor[13]. For example, in an experimental study, Glynn *et al.* showed that simply thinking about a stressful event elicits emotional and physiological stress reactions[37].

At the individual level, responding to stressful events with ruminative thoughts has been associated with impaired somatic health[38–40] and mental health[41, 42]. Furthermore, in a prospective longitudinal study, the development of a ruminative response was shown to mediate the relationship between childhood emotional abuse and depression[43]. In addition to these detrimental individual effects, rumination might be detrimental for organizations. For example, reliving stressful work experiences during off-work time is likely to reduce recovery possibilities. When an individual is absorbed in his or her thoughts about a negative event at work, he or she is less likely to engage in resource-replenishing activities, such as social gatherings or quality time with family. Successful recovery is important for replenishing one's resources[9, 44], and a lack of recovery is associated with poorer performance[10]. Additionally, ruminative thinking during off-work time is negatively related to sleep quality[19, 27, 34]. Poor sleep quality further undermines recovery during off-work time and increases work-related fatigue[45], which in turn has serious consequences in the work environment, e.g., safety[46].

Ruminating about work is believed to be an important mechanism to explain the development of poor health as a result of experiencing workplace stressors[13, 15, 33, 47]. This issue is also relevant for organizational outcomes such as safety behavior and performance. Accordingly, I suggest that work-related rumination is an important outcome in studies on occupational stress.

Relationship of Time Pressure with Work-related Rumination

The underlying cause of rumination is the heightened accessibility in one's memory of information regarding a goal-threatening or goal-failing event at work[18, 32]. Although the event has already passed, information about the event remains activated in the individual's memory. This heightened activation makes event-related thoughts easily cued and difficult to eliminate, which ultimately leads to rumination.

Time pressure is one of the most frequently studied workplace stressors[26]. Empirical evidence largely supports the relationship between time pressure and strain reactions[25, 26, 48–50]. According to Roe and Zijlstra, time pressure is a cognitive evaluation comparing the amount of work to be done in relation to the perceived available capacity[51] (see also Syrek and Antoni[52]). If the amount of work to be done is overtaxing, employees experience time pressure. Experiencing time pressure on a daily level might suggest that on a particular day, the employee was unable to fulfill the expectations that were to be accomplished. The evaluation of a working day as including excessive amounts of work might therefore result in an evaluation of failure. Experiencing failure at work is believed to pose a threat to positive self-evaluations and to ultimately lead to stress reactions[53]. Therefore, the experience of time

pressure has the potential to be perceived as a threat to one's goal of maintaining a positive self-evaluation, which in turn makes this experience likely to trigger ruminative thoughts.

Previous research has shown that daily time pressure is positively related to work-related rumination[20, 27, 52, 54, 55]. For example, the study by Cropley and Purvis showed that teachers working under high time pressure and low control reported more ruminative thoughts in the evening[20]. A study by Vahle-Hinz et al. showed that, on average, working days with higher time pressure lead to more ruminative thoughts in the evening[27]. With regard to time pressure, some studies have also reported a between-person effect on work-related rumination[19, 55, 56]. Theoretically as well as empirically time pressure was shown to be related to work-related rumination. Therefore, including the known effects of time pressure into my investigation tests whether workplace incivility explains unique variance in work-related rumination beyond the effects of time pressure.

Relationship of Workplace Incivility with Work-related Rumination

Just like time pressure, workplace incivility represents a goal-threatening or goal-failing event at work because it represents an affront to one's dignity, leading to the experience of humiliation or embarrassment[57]. Lim et al. noted that although workplace incivility is much more generalized than sexual harassment, it is also "capable of producing an unequal power situation in which the victim feels that he or she is unfairly subjected to embarrassment or humiliation" (p. 97)[57]. Accordingly, individuals are likely to experience being the target of uncivil behavior at work as an affront to their dignity. Positive self-evaluation and positive evaluations by others are considered major motivations in people's lives[58], and the threats that disrespectful behavior poses to these positive evaluations are believed to lead to stress reactions[53]. Therefore, the experience of workplace incivility has the potential to be perceived as a threat to one's goal of maintaining a positive self-evaluation, which suggests a positive relationship with ruminative thoughts.

In addition to the experience of humiliation, workplace incivility has another characteristic that might lead to ruminative thoughts about work. From a target perspective, the perpetrator's intentions for uncivil behavior at work are ambiguous[59]. People who are the targets of uncivil behaviors in the workplace therefore depend on their own insights (e.g., rumination) to determine the intentions of the behavior and to select adequate coping actions[6, 36].

In a recent review of the literature on workplace incivility, Schilpzand et al. noted that the investigation of short-term effects as well as the effects of workplace incivility on off-work time outcomes are fruitful pathways for future studies[2] (p. S82 and S83). As argued above, this is in line with suggestions from the work stress recovery literature. Using a daily diary design and investigating the short-term within-person effects of workplace incivility on off-work ruminative thoughts, I build on implications form the work stress recovery literature and follow Schilpzand et al.'s[2] suggestions for future research. In an experimental study, Schilpzand, Leavitt, and Lim showed that incivility is related to rumination[60]. My study extends Schilpzand et al.'s[60] results by addressing the hypothesis that a low-intensity social stressor (workplace incivility) can trigger a cognitive response to workplace stress in a real-life context.

Hypothesis 1: In addition to daily time pressure, daily workplace incivility measured at the end of the workday has a positive relationship with work-related rumination measured in the evening on that same day (within-person effect).

Research concerning the health-relevant effects of workplace incivility has been primarily cross-sectional and has involved analysis at the between-person level[7, 61]. The results provide convincing evidence that the experience of workplace incivility has negative consequences for individual (e.g., well-being) and organizational outcomes (e.g., commitment, turnover intentions)[2, 3]. Complementing the within-person effects of workplace incivility on work-related rumination, in the present study, I assess the more stable between-person effects of workplace incivility on work-related rumination. Research on daily events in the workplace has convincingly shown that workplace stressors can vary within persons (e.g., stressors are more intense on some days than on others) and between persons (e.g., some people face more intense stressors than others do)[12, 62, 63]. Specifically, in the present study, I investigate whether differences between people's average experiences of workplace incivility over the workweek (i.e., five consecutive working days) predict work-related rumination (between-person effect) and whether the experience of daily workplace incivility compared with a person's average experience predicts work-related rumination (within-person effect). Considering the literature on the between-level relationship between workplace incivility and individual and organizational outcomes,[1, 64–66] and the defining characteristic of an ambiguous intent to harm[2, 59], I expect that

differences in people's experiences of workplace incivility over one workweek will lead to more ruminative thoughts about work.

Hypotheses 2: In addition to between-person differences in time pressure, between-person differences in the experience of workplace incivility over one workweek are positively related to work-related rumination measured in the evening of a workday (between-person effect).

Mood as an Explanatory Mechanism

Mood is a diffuse affective state that provides the affective background for our experiences, behaviors and cognitions[67]. Mood has been shown to be related to several organizational outcomes, such as performance, decision making, creativity, turnover, and intention to quit[68]. As Rothbard and Wilk suggested, mood "may provide an affective frame (i.e., affective priming) that colors how people view and feel about daily workplace experiences" (p.959–960)[69]. Several researchers have suggested that mood might be a mediator in the relationship between workplace stressors and individual and organizational outcomes[70–74] and is a mechanism that translates stressful work experiences to work and off-work behaviors and feelings[30, 75]. For example, based on the mood spillover hypothesis and ideas about withdrawal-based coping, Story and Repetti showed that spouses reported heightened marital anger and withdrawal behaviors on days when there were more negative social interactions at work compared with days that included fewer of these interactions. These relationships were mediated by mood[75].

The affective event theory proposes that affective reactions (emotions or moods) serve as mediators between the experience of an event and the subsequent behavior[30]. Moods, which are the focus of the present study, are thought to be affected by mildly positive or negative events[30]. Because workplace incivility is defined by its low intensity[59], it might be reasonable to suggest that this stressor leads to a mood response. However, by impairing mood, according to the mood-as-information theory[31], the experienced workplace incivility event is more likely to transfer into off-work ruminative thoughts because moods provide information about the environment, which influences cognitive processes and behaviors (see also Carlson et al.[70]). Experiencing an impaired mood at the end of a workday suggests that there is a problem[31, 76], which heightens ruminative thoughts about work in the evening. Furthermore, impaired moods are likely to produce more intensive and systematic processing of information[31, 77]. This processing heightens the accessibility of the information regarding a goal-threatening or goal-failing event at work in one's memory and may result in brooding about the experienced negative event. I therefore expect that workplace incivility leads to impaired mood responses and that this mood may signal that one was treated badly, which in turn should facilitate work-related rumination. Accordingly, I present the following hypothesis:

Hypothesis 3: The relationship between daily workplace incivility measured at the end of a workday and work-related rumination measured in the evening of that same day is mediated by mood (mediation effect, within-person). Specifically, I assume that daily workplace incivility relates to a change in the levels of rumination in the evening of that same day, via a change in the levels of mood at the end of the workday.

Subjects and Method

I conducted an online diary study over five consecutive workdays (Monday to Friday) in Germany. Every day, the participants received two separate e-mails with a link to the online survey. The first link was sent at 4 pm each day and asked questions at the end of the participants' workday. The second link was sent at 8 pm each day and asked questions about the evening of that same day. A week prior to the collection of the daily diary data, the participants received an e-mail that asked them to provide sociodemographic data. I used the time stamp to control for compliance with data collection. Because I was interested in the lag effect between workplace incivility measured at the end of the workday and ruminative thoughts measured in the evening, I excluded all diary entries that did not provide time-separated measurements. Additionally, the participants had to provide data on at least two consecutive measurement days.

To participate in the current study, individuals had to be employed full time and not participating in shift work. The respondents were recruited through a convenience sampling approach whereby the author and his students approached their networks. All of the participants were recruited via personal contacts, sometimes using online postings (e.g., Facebook, Xing). Of the 226 invited participants, 184 subjects agreed to participate in the present study (81% response rate). However, due to my inclusion criteria, I had to exclude several participants from the final sample. Five participants were excluded because they identified themselves as students (1), reported that they engaged in shift work (2), or did not work full time (2). An

additional 10 participants did not provide any daily dairy data, 18 provided data on only one measurement day, 35 failed to provide time-separated measurements, and 21 did not complete the diary on at least two consecutive days. In total, my sample consisted of 95 participants who provided daily diary data on M=3.75 d (52% response rate). For the first measurement point (at the end of the workday), I collected data for 356 valid measurement days, reflecting a response rate of 74.9%. For the second measurement point (in the evening of the same day), I collected data for 355 valid measurement days, reflecting a response rate of 74.7%.

Fifty-four percent of the participants were female, and the mean age was M=39 yr (ranging from 20 to 65 yr). Most of the participants had a higher education degree (71%) and had completed university (43%) or occupational training (44%). The participants came from a variety of occupations, with the majority working in the service sector (18%), followed by telecommunications (13%). Most of the participants (60%) had worked for their current employer for more than 5 yr. On average, the participants worked M=42 h per week (SD=4.8 h) and M=8.26 h (SD=1.33 h) on the measurement days. Participants who provided data in compliance with my inclusion criteria were older than participants who failed to provide data in accordance with my inclusion criteria (t(182)=−1.99, p<0.05). I observed no other differences. Additionally, participants who provided valid data on more measurement days (≥4) did not differ from participants who provided valid data on fewer measurement days (<4).

Measures

Workplace incivility

I used four items of the workplace incivility scale (WIS) developed by Cortina *et al.* to measure incivility at the end of each workday[65]. The original scale asked about experiences of workplace incivility over the past five years. I therefore adapted the introduction to a daily context. An example item is as follows: "During today's workday, were you in a situation where any of your supervisors, coworkers or customers put you down or were condescending to you?" (1 "never," 5 "several times"). The average Cronbach's alpha over the five measurements was 0.71 (ranging from 0.54 to 0.83).

Mood

Mood was measured at the end of each workday. I used the subscale hedonic tone of the instrument developed by Wilhelm and Schoebi to measure mood on a daily basis[67]. The participants responded to the following statements: "At this moment, I feel '1' contented vs. '6' discontented (reversed coded), '1' unwell vs. '6' well." Inter-item correlations for each measurement day ranged from 0.73 to 0.85 (M=0.81).

Work-related rumination

Work-related rumination was measured in the evening of each measurement day using two items from the irritation scale[78]. The items were as follows: "Today even at home I thought about my problems at work" (1 "not applicable," 5 "applicable) and "Today I had difficulty attempting to stop thinking about work" (1 "not applicable," 5 "applicable"). The inter-item correlations for each measurement day ranged from 0.53 to 0.70 (M=0.66).

Time pressure

Daily time pressure was measured at the end of each workday using a three-item scale from the salutogenesis job analysis[79]. An example item is as follows: "Today you had enough time to do your work" (reverse coded; 1 "not applicable," 5 "applicable"). The average Cronbach's alpha over the five measurements was 0.88 (ranging from 0.84 to 0.91).

Control variables

In line with previous research on workplace incivility, I considered sex (1 "male," 2 "female"), age and tenure as possible confounding factors[57, 66, 80]. With regard to sex, Lim *et al.* reported that women might be more inclined to "attend to and to become distressed by interpersonal problems at work, such as incivility" (p. 99)[57]. Additionally, Loi *et al.* suggested that women, due to their limited organizational power, have limited power to stop mistreatment[80]. With regard to age and tenure, Ferguson stated that older and more tenured employees might mitigate or magnify the effects of workplace incivility on outcomes outside the workplace because of better coping strategies (mitigate) or because of being more worn out by incivility (magnify)[66].

With regard to work-related rumination, Wang *et al.* reported that ruminative thoughts might not immediately follow the experience of a goal-threatening event at work[18]. Additionally, Cropley *et al.* highlighted that ruminative thoughts decline from early in the evening to bedtime[34]. To exclude the possibility that the timing of my measurements explained my results regarding the spillover effect of workplace incivility on work-related rumination,

I considered the duration between the two measurement points (in hours) in my analyses.

Analysis

My data had a hierarchical structure in which days were nested in persons. Therefore, I conducted a multilevel analysis using the nlme package in R[81]. I began my analyses by testing an unconditional means model (null model) to calculate the intra-class correlations (ICCs) and to test whether the intercept variance was different from zero. The results showed that a multilevel approach was indicated (work-related rumination: ICC1=0.48, workplace incivility: ICC1=0.43, time pressure: ICC1=0.63, mood: ICC1=0.49). In diary studies, time as a level-1 variable has a logical order and may affect within-person errors. Accordingly, I tested for time trends within my data. Because of the temporal structure of my data, I also controlled for autocorrelations and heteroscedasticity, as recommended by Bliese[82].

I tested my hypotheses by introducing within-person and between-person effects of time pressure and workplace incivility on work-related rumination (measured in the evening of the same day). Regarding the within-person effects, I centered my day-level predictor (level 1) on each person's mean[83], which removed all between-person variance[62, 82].

Regarding the between-person effect, I added the grand-mean-centered person mean of time pressure and workplace incivility to the equation, and followed the recommendation of Raudenbush and Bryk[84]. To disentangle the between- and within-person effects, it is necessary to investigate the compositional effect[84]. Compositional effects (or contextual effects) are the extent to which the magnitude of the person-level relationship (the between-person effect) differs from the day-level relationship (the within-person effect) (Raudenbush and Bryk)[84]. In the context of the present study, the compositional effects highlight the expected difference in work-related rumination between two days with equal levels of daily time pressure or workplace incivility, which correspond to people with different weekly experiences of time pressure or workplace incivility.

Day-level control variables (level 1) were person-mean centered, and the person-level control variables (level 2) were grand-mean centered.

To test my mediation hypothesis (hypotheses 3), I investigated whether a change in mood (controlling for mood the previous day; lag-1) mediated the relationship between workplace incivility with a change in work-related rumination in the evening (controlling for work-related rumination the previous day; lag-1)[85]. I tested for the significance of the indirect effect with the Monte Carlo method adapted for multilevel data[86, 87]. This procedure performs similarly to other bootstrap methods and can be used within multilevel frameworks[88].

Workplace incivility and mood as my mediator variable were measured at the same point in time. It might be possible that my proposed mediational effect is reversed; mood might influence ratings of workplace incivility, which in turn affect work-related rumination in the evening. Therefore, I investigated whether a change in workplace incivility (controlling for workplace incivility the previous day; lag-1) mediated the relationship between mood and a change in work-related rumination in the evening (controlling for work-related rumination the previous day; lag-1).

Results

The descriptive statistics show that, on average, the time between the two measurement points (at the end of the workday and in the evening of that day) was M=3.91 h (SD=1.88 h). Table 1 shows the correlations among all study variables. All correlations were in the expected direction.

The control variables sex, age, tenure, and the time between measurement occasions were not significantly related to work-related rumination in my multilevel analysis. Importantly, the effects reported in Table 2 remained stable regardless of the inclusion of these variables. I therefore decided to exclude sex, age, tenure, and time between measurement occasions from my final model (Table 2).

The "direct effects" column in Table 2 shows that both daily experienced time pressure and daily experienced workplace incivility are positively related to work-related rumination. These results supports Hypothesis 1. Additionally, the between-person effects of time pressure and workplace incivility on ruminative thoughts were significant. Thus supporting Hypothesis 2.

In Hypothesis 3, I proposed that mood is a mediator of the spillover effect of daily workplace incivility (measured at the end of a workday) on work-related rumination (measured in the evening of the same day). The result can be seen in the "mediation" column in Table 2. As shown in Table 2, the relationship between daily workplace incivility and work-related rumination remained significant when mood was added to the equation ($\gamma 10$=0.53, t(133)=2.33,

Table 1.   Means, standard deviations, reliabilities, and correlations between study variables

Variable	M	SD	α/r	1	2	3	4	5	6	7	8	9
1. Sex	1.54	0.50		-								
2. Age	38.58	11.79		0.05	-							
3. Tenure	4.18	1.11		0.11	0.52	-						
4. Hours between measurement points	3.92	1.91		−0.02	−0.05	0.08	-	−0.06	−0.13	−0.08	0.11	−0.13
5. Daily working hours	8.26	1.33		−0.19	−0.05	−0.12	−0.03	-	−0.02	0.32	−0.12	0.23
6. Daily workplace incivility	1.15	0.32	0.71	0.18	−0.07	−0.21	−0.18	−0.14	-	0.16	−0.36	0.34
7. Daily time pressure	2.38	1.10	0.88	0.16	0.06	−0.16	−0.12	0.38	0.18	-	−0.47	0.35
8. Mood	4.55	1.22	0.81	−0.17	0.05	0.06	0.28	−0.05	−0.49	−0.53	-	−0.48
9. Work-related rumination	2.13	1.02	0.66	0.12	−0.05	−0.20	−0.22	0.28	0.43	0.45	−0.56	-

Sex: 1=male, 2=female; Cronbach's alphas for day-level variables are mean internal consistencies averaged over all measurement days; for scales with only two items, correlations of each measurement day were Fisher's Z transformed, averaged and back transformed; correlations below the diagonal are person-level correlations (N=95) with correlations r≥0.21 significant at $p<0.05$ and r≥0.28 significant at $p<0.01$; correlations above the diagonal are day-level correlations (N=292–356) with correlations r≥0.11 significant at $p<0.05$ and r≥0.16 significant at $p<0.01$.

Table 2.   Multilevel estimates of workplace incivility predicting on off-work ruminative thoughts

Variable	Null model		Direct effects		Mediation	
	Estimate (SE)	t	Estimate (SE)	t	Estimate (SE)	t
Intercept	2.10 (0.08)	25.32**	2.14 (0.08)	27.86**	2.14 (0.08)	27.99**
Within-person						
Daily workplace incivility			0.40 (0.18)	2.21*	0.53 (0.23)	2.33*
Daily time pressure			0.17 (0.07)	2.59*	0.08 (0.10)	0.82
Mood					−0.20 (0.07)	−2.63**
Previous day mood (lag-1)					−0.11 (0.08)	−1.46
Previous day rumination (lag-1)					−0.19 (0.09)	−1.98*
Between-person						
Weekly workplace incivility			0.75 (0.33)	2.26*	0.50 (0.41)	1.22
Weekly time pressure			0.27 (0.09)	2.96*	0.31 (0.11)	2.89**
Mediation					Estimate	95% CI
Indirect effect of workplace incivility via mood					0.06	[−0.027, 0.187]
Indirect effect of time pressure via mood					0.10	[0.020, 0.205]
Level 1 intercept variance (SE)	0.53 (0.73)		0.51 (0.55)		0.51 (0.71)	
Level 2 intercept variance (SE)	0.50 (0.71)		0.30 (0.72)		0.31 (0.55)	
−2 × Log (lh)	927.15		886.21		595.83	
df	3		7		10	
BIC	944.76		927.22		649.94	
AIC	933.15		900.21		615.83	

Sex: 1=male, 2=female; −2 × Log (lh): log-likelihood statistic used to compare model fit based on χ^2 distributions; df: degrees of freedom; BIC: Bayesian Information Criterion; AIC: Akaike Information Criterion; confidence intervals of indirect effects are based on the Monte Carlo method for assessing mediation with 20,000 repetitions as described by Selig and Preacher (2008); between-person effect: compositional effect; the compositional effect was calculated as recommended by Raudenbush and Bryk (2002, p. 141); please note that results remain unchanged if previous day mood (lag-1) is excluded from the model presented in the "mediation" column; *$p<0.05$; **$p<0.01$. Indirect effect of workplace incivility on work-related rumination was tested via mood with a 90% CI. The result was still non-significant at 0.06, 90% CI [−0.014, 0.158].

$p<0.05$). Tests of indirect effects revealed that mood did not mediate the relationship between daily workplace incivility (measured at the end of a workday) and work-related rumination (measured in the evening of that same day; 0.06, 95% CI [−0.027, 0.187]). The result does not support Hypothesis 31.

To test for possible reversed effects of my mediational hypothesis, I investigated whether the effect of mood on work-related rumination was mediated by workplace incivility. Tests of indirect effects revealed that workplace

incivility (−0.03, 95% CI [−0.102, 0.046]) did not mediate the relationship between mood (measured at the end of a workday) and work-related rumination (measured in the evening of the same day).

Additional Analysis

The indirect relationship between workplace incivility and work-related rumination via mood was not significant, thus contradicting Hypothesis 3. In an additional analysis however, I found a significant indirect relationship of workplace incivility on off-work ruminative thoughts via mood, when time pressure was not included in the model (0.13, 95% CI [0.016,0.295].

Furthermore, the results in the "mediation" column in Table 2 also revealed that the relationship between daily time pressure and work-related rumination was reduced when mood was added to the equation ($\gamma10$ $_{without\ mediator}$ =0.17; $\gamma10$ $_{with\ mediator}$=0.08) and became non-significant ($\gamma10$=0.08, t(133)=0.82, p=ns). Therefore, I decided to additionally test whether the indirect effect of daily time pressure on work-related rumination via mood was significant. The results of this additionally analysis revealed that mood mediated the relationship between daily time pressure (measured at the end of a workday) and work-related rumination (measured in the evening of the same day; 0.10, 95% CI [0.020, 0.205]). This effect remained stable regardless of including or excluding workplace incivility from the model.

As with the indirect effect of workplace incivility on work-related rumination via mood, I also tested for a possible reverse effect. That is, I tested whether the effect of mood on work-related rumination was mediated by time pressure. Tests of significance of the indirect effect revealed that time pressure did not mediate the relationship between mood (measured at the end of a workday) and work-related rumination (measured in the evening of the same day) (−0.04, 95% CI [−0.092, 0.035]).

Discussion

My results showed that higher daily workplace incivility (compared to a person's average experience) was related to more ruminative thoughts in the evening (within-person effect). Research on the relationship between workplace incivility and individual and organizational outcomes has primarily been cross-sectional and conducted at the between-person level of analysis[1, 64, 66]. This research offers rich insight into the question of whether outcomes differ if

an individual experiences more workplace incivility than other individuals do. However, "the adoption of a purely between-person approach toward employee mistreatment (e.g., bullying, undermining) may mask considerable and meaningful fluctuations in the experience of, responses to, and consequences of such behavior" (Taylor *et al.*)[7]. The investigation of short-term, within-person effects of workplace incivility remains in its infancy[5, 6]. My study adds to this limited evidence and demonstrates that low-intensity rude behavior at work affects off-work ruminative thoughts. This finding is important because spillover effects from work stressors into off-work time are central to recovery research because these effects are a mechanism that translates short-term effects into detrimental outcomes (both individual and organizational) in the long run[11]. My finding complements previous research showing that higher-intensity social stressors (mistreatment by customers) are relevant for off-work recovery[89] and rumination[18], as well as the literature presenting a relationship between several workplace stressors and detachment or rumination[12, 20, 21, 27, 34].

Two studies have previously reported similar results. First, Wang *et al.* reported a spillover effect of customer mistreatment on work-related rumination[18]. Second, Nicholson and Griffin reported a within-person spillover effect of workplace incivility on detachment[17]. My result is in line with the results reported by Nicholson and Griffin and Wang *et al.* [17, 18]. However, my study differs from the study by Wang *et al.*, because customer mistreatment may have a considerably higher intensity compared to workplace incivility and is not ambiguous in its intent to harm. Further, Nicholson and Griffin reported a spillover effect of workplace incivility on detachment after work. My study differs from Nicholson and Griffins study, because rumination and detachment are related but distinct constructs[90]. Further, both previous studies did not include any additional stressors into the analysis. In the present study I included time pressure as an additional stressor into the analysis. Including time pressure in my study advances previous research on workplace incivility because I tested whether the assumed effect of workplace incivility on work-related rumination persists even after controlling for the known effects of time pressure on work-related rumination[20, 27]. This analysis does not appear in previous studies. My results therefore emphasize that minor short-term negative encounters during the workday (within-person effect of workplace incivility) matter, even beyond the effects of a general stressful workday. Additionally, with regard to time pressure my results mainly corrobo-

rated previous research, showing that days with higher time pressure, compared to the average experience of a person (within-person effect), as well as differences in the experience of time pressure between persons over the work week (between-person effect), are related to more ruminative thoughts about work[27, 52]. This within- and between-person effect of time pressure on work-related rumination further underlines the importance of time pressure in occupational health psychology[25, 26].

My results show that the daily experience of workplace incivility and the weekly differences in workplace incivility among people are related to rumination about work in the evening. Some previous studies have reported within- and between-person effects of workplace incivility on well-being measures. In a study by Zhou *et al.*, the authors reported daily within-person effects of workplace incivility on end-of-work negative affect but non-significant between-person effects[6]. In contrast, Beattie and Griffin reported both within- and between-person effects of workplace incivility on daily stress levels[5]. However, in contrast to previous studies, my study separated the between-person from the within-person effects by investigating the compositional effect. My results suggest that employees react with rumination to chronic uncivil behavior in the workplace, and also react with ruminative thoughts if the behavior is more uncivil than their average experience.

Recently Demsky *et al.* supported a between-person effect of workplace incivility on rumination[21]. The present study complements this between-person effect and also support a within-person effect of workplace incivility on work-related rumination. It may be that both the level of incivility per se and its difference from individual levels of incivility experienced at work are important for employees' reactions.

In line with affective events theory[30] my results support a negative relationship between both, daily experienced workplace incivility and daily time pressure with mood (Table 1). Accordingly, daily workplace stressors are related to daily affective responses. However, contradicting my propositions based on the affective events theory and the mood as information theory[30, 31], I could not confirm an indirect effect of workplace incivility on work-related rumination via mood. However, in my additional analysis I could confirm this indirect relationship when time pressure was excluded from the model. Additionally, I could confirm an indirect effect between daily time pressure and work-related rumination via mood, which was in line with assumptions of affective events theory and the mood as information theory[30, 31]. How can I explain this not entirely clear pattern of results?

With regard to time pressure, I proposed the direct relationship with work-related rumination on the assumption that high levels of daily time pressure might result in the evaluation of failure in accomplishing that day's tasks. However, this might not always be the case. Time pressure is discussed as a so-called challenge stressor because, on average, the demands time pressure places on employees are seen as controllable[50, 91]. Accordingly, the experience of high time pressure as a failure to meet that day's work demands might require an additional cue that the workday was unsuccessful, thus mood functioned as an informational trigger[31, 92]. The results of my study support this assumption. However, because I conducted my analysis regarding the indirect relationship of time pressure with work-related rumination via mood post-hoc, replication of this relationship is warranted in future studies.

With regard to workplace incivility I was only able to support the proposed mediation effect on work-related rumination via mood, when time pressure was excluded from the model. So it might be that by including time pressure crucial variance was partialled out[28, 29]. Indeed, my analysis showed that the relationship between workplace incivility and mood (a path in my mediation analysis) became not significant, when time pressure was included into the model. Accordingly, workplace incivility was negatively related to mood, but did not explain a unique amount of variance in mood. This indicates that daily time pressure is more relevant to explain mood at the end of the workday, and that the shared variance between daily workplace incivility and daily time pressure prevented the detection of mood as mediator in the relationship between workplace incivility and work-related rumination. As this result was also obtained post-hoc I do not want to overestimate it. Future research is needed to further investigate mediators of the relationship between workplace incivility and work-related rumination. For example, Schilpzand *et al.* showed in an experimental study that the relationship between incivility and rumination was mediated by self-blame[60]. They argued that self-blame is a likely response to incivility because this behavior is "difficult to uniformly dismiss as an indictment on the character of the perpetrator" (p. 34)[60]. Thus, in future studies, it might be important to evaluate whether self-blame is a mediator of the relationship between workplace incivility and work-related rumination in a real-life context.

In conclusion the present study supported my assumption that little negative encounters at the workplace matter for work-related rumination after work on a daily within-

person level and a more stable between-person level. This is true even when controlling for the known effects time pressure. The assumed mediation via mood did not receive unambiguous support, and future research is needed to further investigate what transfers the experience of daily workplace incivility into off-work ruminative thoughts.

Limitations

This study has some limitations that should be considered when interpreting the results. First, there is evidence that the status of the instigator impacts the negative effects of workplace incivility on the target[1, 65]. In the current study, I asked only about the experience of workplace incivility that day regardless of the status of the instigator. It might be important for future studies to not only investigate the experience of workplace incivility on a daily basis but also include characteristics (e.g., status) of the instigator in the analysis.

Second, daily workplace incivility showed an acceptable overall reliability of Cronbach's alpha=0.71. However, on the first measurement point the reliability was rather low (0.54). In order to rule out that low reliability affected my results, I repeated my analysis, excluding the unreliable day. The results stayed the same. However, future research might consider whether daily incivility items are better conceptualized as causal indicators as opposed to effect indicators[93]. Experiencing one specific uncivil behavior on a daily basis (e.g., experiencing condescending behavior) does not always imply the experience of other uncivil behaviors (e.g., being ignored). However, experiencing an uncivil behavior more chronically (e.g., over the past five years) makes an individual likely to evaluate the experience of other uncivil behaviors more frequently. Thus, a correlation between incivility items might be more likely when measuring chronic, rather than daily, workplace incivility.

Third, the reliability of my measure of work-related rumination was acceptable (mean r=0.66). Future studies could benefit from the use of more than two items that measure rumination or by applying a structural equation approach. However, my measure of work-related rumination captured repetitive thinking without confounding it with affective responses (see, for example, the affective rumination scale developed by Cropley *et al.*[94]). From my perspective, this method was important because it helped separate my mediator (mood) from my outcome (rumination). Nevertheless, given the only acceptable reliability of my measure of work-related rumination, it might be neces-

sary for future studies to develop a new scale to measure daily ruminative thoughts about work.

Fourth, I mainly recruited my sample using our private networks. This method might result in a sample bias that may hamper possible generalizations. However, compared with other studies on workplace incivility[5, 6, 17], my study consisted of participants from a variety of occupations, which supports generalization.

Fifth, as my study focused on the within-person relationship between daily workplace incivility and work-related rumination, I did not include between-person factors that further help to explain for whom and under which circumstances this relationship is more likely into my study design (investigating cross-level interactions). As suggested by affective events theory[30] person differences in affective dispositions might function as a potential cross-level moderator, and may thus be a fruitful starting point investigating the relationship between daily workplace incivility and evening rumination further.

Practical Implications

In the present study, I established a daily within-person spillover effect of workplace incivility on work-related rumination. Additional analysis showed that mood mediated the relationship between daily time pressure and work-related rumination. At least three practical suggestions emerge from these results. The first and most obvious suggestion is to reduce the occurrence of uncivil events in the workplace. However, this suggestion is not easy to implement because the targets of uncivil encounters are unlikely to report such experiences due to their uncertainty about the intention of these events. As Neuman (2004, 74–75) asked, "How (and to whom) do you report having had your feelings hurt (…) Furthermore, would you believe that such an incident is serious enough to merit a formal report?"[95]. Therefore, organizations have the task of exposing these behaviors and providing opportunities to report them. Information about the characteristics and consequences of these behaviors might help to establish a climate in which workplace incivility events are registered and actions can be taken to reduce them. This approach is also relevant because rudeness among coworkers has been shown to spread easily and to have significant consequences for organization members[96]. Additionally, the within-person effect of workplace incivility on work-related rumination suggests that it might not be sufficient to broadly discourage incivility in the workplace. Actions are also necessary if an uncivil event is more intense than

an employee's typical experience regardless of whether this incivility is particularly strong per se. However, acting in a present moment is difficult for supervisors and colleagues, because it is hard to know whether an incivility event is above the threshold of the victim. One possible way of putting attention to individuals' threshold is by providing opportunities to exchange views on how to interact with one another and to provide the opportunity to learn what behaviors are perceived as rude by colleagues and coworkers. This might help, because experience of incivility is likely to be a function of perception.

Second, regarding the experience of more ruminative thoughts on the evenings of days in which employees experienced workplace incivility, trainings that improve individuals' abilities to detach and/or stop negative ruminative thinking might be helpful. One way of helping employees to stop thinking about work is the implementation of a "feel like continuing" stop rule[97]. Applying this rule to the daily context means that employees learn to stop thinking about work-related issues when they detect that these thoughts negatively affect their mood. In an experimental setting Martin *et al.* showed that participants employing the "feel like continuing" stop rule viewed changes in mood as a signal to stop the ruminating task, whereas participants instructed to use the "as many as can" stop rule viewed changes in mood as a signal that they haven't thought hard enough and to keep ruminating[76, 98]. Additionally, short cognitive behavioral therapy-based interventions haven been shown to improve recovery outside of work and reduce work-related rumination[99].

Third, my results showed that mood has a mediating effect on the relationship between daily time pressure and work-related rumination. Accordingly, negative feelings evoked by high time pressure transfers this experience into more dysfunctional cognitive efforts to cope with that day's experiences. This result might suggest that employees' mood when leaving their workplace on a daily basis is important. Helping employees leave their negative feelings at work and not take them home might therefore be important to protect organizations and employees from detrimental long-term consequences.

Presentation at a Conference

Some of the findings were presented at the 17th EAWOP congress in Dublin, Ireland. The oral presentation was entitled "Daily spillover effect of workplace incivility on work-related rumination".

Conflict of Interest

There are no conflicts of interest.

Acknowledgement

References

1) Lim S, Lee A (2011) Work and nonwork outcomes of workplace incivility: does family support help? J Occup Health Psychol **16**, 95–111.

2) Schilpzand P, De Pater I, Erez A (2016) Workplace incivility. A review of the literature and agenda for future research. J Organ Behav **37**, 57–88.

3) Hershcovis MS (2011) "Incivility, social undermining, bullying... oh my!": A call to reconcile constructs within workplace aggression research. J Organ Behav **32**, 499–519.

4) Sliter M, Jex S, Wolford K, McInnerney J (2010) How rude! Emotional labor as a mediator between customer incivility and employee outcomes. J Occup Health Psychol **15**, 468–81.

5) Beattie L, Griffin B (2014) Day-level fluctuations in stress and engagement in response to workplace incivility: a diary study. Work Stress **28**, 1–19.

6) Zhou ZE, Yan Y, Che XX, Meier LL (2015) Effect of workplace incivility on end-of-work negative affect: examining individual and organizational moderators in a daily diary study. J Occup Health Psychol **20**, 117–30.

7) Taylor SG, Bedeian AG, Cole MS, Zhang Z (2014) Developing and testing a dynamic model of workplace incivility change. J Manage **43**, 645–70.

8) Meijman TF, Mulder G (1998) Psychological aspects of workload. In: Handbook of Work and Organizational Psychology, 2nd Ed., Drenth PJD, Thierry H, de Wolff CJ (Eds.), 5–33, Psychology Press, Sussex.

9) Hobfoll SE (1998) Stress, culture, and community: the psychology and philosophy of stress, Plenum Press, New York.

10) Binnewies C, Sonnentag S, Mojza EJ (2009) Daily performance at work: feeling recovered in the morning as a predictor of day-level job performance. J Organ Behav **30**, 67–93.

11) Geurts SAE, Sonnentag S (2006) Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment. Scand J Work Environ Health **32**, 482–92.

12) Sonnentag S, Fritz C (2015) Recovery from job stress. The stressor-detachment model as an integrative framework. J

Organ Behav **36**, 72–103.

13) Brosschot JF, Pieper S, Thayer JF (2005) Expanding stress theory: prolonged activation and perseverative cognition. Psychoneuroendocrinology **30**, 1043–9.

14) Zijlstra FRH, Sonnentag S (2006) After work is done : psychological perspectives on recovery from work. Eur J Work Organ Psychol **15**, 129–38.

15) Brosschot JF, Gerin W, Thayer JF (2006) The perseverative cognition hypothesis: a review of worry, prolonged stress-related physiological activation, and health. J Psychosom Res **60**, 113–24.

16) Lim S, Ilies R, Koopman J, Christoforou P, Arvey RD (2016) Emotional mechanisms linking incivility at work to aggression and withdrawal at home. J Manage **44**, 2888–908.

17) Nicholson T, Griffin B (2015) Here today but not gone tomorrow: incivility affects after-work and next-day recovery. J Occup Health Psychol **20**, 218–25.

18) Wang M, Liu S, Liao H, Gong Y, Kammeyer-Mueller J, Shi J (2013) Can't get it out of my mind: employee rumination after customer mistreatment and negative mood in the next morning. J Appl Psychol **98**, 989–1004.

19) Berset M, Elfering A, Lüthy S, Lüthi S, Semmer NK (2011) Work stressors and impaired sleep: rumination as a mediator. Stress Health **27**, e71–82.

20) Cropley M, Purvis LM (2003) Job strain and rumination about work issues during leisure time: a diary study. Eur J Work Organ Psychol **12**, 195–207.

21) Demsky CA, Fritz C, Hammer LB, Black AE (2019) Workplace incivility and employee sleep: the role of rumination and recovery experiences. J Occup Health Psychol **24**, 228–40.

22) Sonnentag S, Frese M (2003) Stress in organizations. In: Handbook of psychology. Industrial and organizational psychology, 12th Ed., Borman WC, Ilgen DR, Klimoski RJ (Eds.), 453–91, John Wiley & Sons, Hoboken.

23) Dormann C, Zapf D (2002) Social stressors at work, irritation, and depressive symptoms: accounting for unmeasured third variables in a multi-wave study. J Occup Organ Psychol **75**, 33–58.

24) Karasek RA (1979) Job demands, job decision latitude, and mental strain: implications for job design. Adm Sci Q **24**, 285–308.

25) Vahle-Hinz T (2016) Stress in nonregular work arrangements: a longitudinal study of task- and employment-related aspects of stress. J Occup Health Psychol **21**, 415–31.

26) Häusser JA, Mojzisch A, Niesel M, Schulz-Hardt S (2010) Ten years on: a review of recent research on the job demand–control (-support) model and psychological well-being. Work Stress **24**, 1–35.

27) Vahle-Hinz T, Bamberg E, Dettmers J, Friedrich N, Keller M (2014) Effects of work stress on work-related rumination, restful sleep, and nocturnal heart rate variability experienced on workdays and weekends. J Occup Health

Psychol **19**, 217–30.

28) Becker TE, Atinc G, Breaugh JA, Carlso KD, Edwards JR, Spector PE (2016) Statistical control in correlational studies: 10 essential recommendations for organizational researchers. J Organ Behav **37**, 157–67.

29) Spector PE, Brannick MT (2011) Methodological urban legends: the misuse of statistical control variables. Organ Res Methods **14**, 287–305.

30) Weiss HM, Cropanzano R (1996) Affective events theory: a theoretical discussion of the structure, causes and consequences of affective experiences at work. Res Organ Behav **18**, 1–74.

31) Schwarz N, Clore G (2003) Mood as Information: 20 years later. Psychol Inq **14**, 296–303.

32) Rothermund K (2003) Automatic vigilance for task-related information: perseverance after failure and inhibition after success. Mem Cognit **31**, 343–52.

33) Baranik LE, Wang M, Gong Y, Shi J (2014) Customer mistreatment, employee health, and job performance: cognitive rumination and social sharing as mediating mechanisms. J Manage **43**, 1261–82.

34) Cropley M, Dijk DJ, Stanley N (2006) Job strain, work rumination, and sleep in school teachers. Eur J Work Organ Psychol **15**, 181–96.

35) Nolen-Hoeksema S, Wisco BE, Lyubomirsky S (2008) Rethinking rumination. Perspect Psychol Sci **3**, 400–24.

36) Chan ME, McAllister DJ (2014) Abusive supervision through the lens of employee state paranoia. Acad Manage Rev **39**, 44–66.

37) Glynn LM, Christenfeld N, Gerin W (2007) Recreating cardiovascular responses with rumination: the effects of a delay between harassment and its recall. Int J Psychophysiol **66**, 135–40.

38) Verkuil B, Brosschot JF, Gebhardt WA, Thayer JF (2010) When worries make you sick: a review of perseverative cognition, the default stress response and somatic health. J Exp Psychopathol **1**, 87–118.

39) Verkuil B, Brosschot JF, Meerman EE, Thayer JF (2012) Effects of momentary assessed stressful events and worry episodes on somatic health complaints. Psychol Health **27**, 141–58.

40) Verkuil B, Brosschot JF (2012) Worry and somatic health: a literature review. Gedragstherapie **45**, 31–42.

41) Esbjorn BH, Reinholdt-Dunne ML, Caspersen ID, Christensen LB, Chorpita BF (2013) Penn State Worry Questionnaire: findings form normative and clinical samples in Denmark. J Psychopathol Behav Assess **35**, 113–22.

42) Wiersma JE, van Oppen P, van Schaik DJF, van der Does AJW, Beekman ATF, Penninx BWJH (2011) Psychological characteristics of chronic depression: a longitudinal cohort study. J Clin Psychiatry **72**, 288–94.

43) Padilla Paredes P, Calvete E (2014) Cognitive vulnerabilities as mediators between emotional abuse and depressive symptoms. J Abnorm Child Psychol **42**, 743–53.

44) Sonnentag S, Fritz C (2007) The Recovery Experience Questionnaire: development and validation of a measure for assessing recuperation and unwinding from work. J Occup Health Psychol **12**, 204–21.

45) Querstret D, Cropley M (2012) Exploring the relationship between work-related rumination, sleep quality, and work-related fatigue. J Occup Health Psychol **17**, 341–53.

46) Williamson A, Lombardi DA, Folkard S, Stutts J, Courtney TK, Connor JL (2011) The link between fatigue and safety. Accid Anal Prev **43**, 498–515.

47) Hamesch U, Cropley M, Lang J (2014) Emotional versus cognitive rumination: are they differentially affecting long-term psychological health? The impact of stressors and personality in dental students. Stress Health **30**, 222–31.

48) Akerstedt T, Fredlund P, Gillberg M, Jansson B (2002) Work load and work hours in relation to disturbed sleep and fatigue in a large representative sample. J Psychosom Res **53**, 585–8.

49) Bakker AB, Demerouti E (2007) The job demands-resources model: state of the art. J Manag Psychol **22**, 309–28.

50) Lepine JA, Podsakoff NP, Lepine MA (2005) A meta-analytic test of the challenge stressor-hindrance stressor framework: an explanation for inconsistent relationship among stressors and performance. Acad Manage J **48**, 764–75.

51) Roe RA, Zijlstra FR (2000) Work pressure Results of a conceptual and empirical analysis. In: Innovative Theories, Tools, and Practices in Work and Organizational Psychology, Vartiainen M, Avalone F, Anderson N (Eds.), 29–46, Hogrefe & Huber Publishers, Stuttgart.

52) Syrek CJ, Antoni CH (2014) Unfinished tasks foster rumination and impair sleeping—particularly if leaders have high performance expectations. J Occup Health Psychol **19**, 490–9.

53) Semmer NK, Jacobshagen N, Meier LL, Elfering A (2007) The "stress-as-offense-to-self" perspective. In: Occupational Health Psychology. European Perspectives on Research, Education and Practice, Houdmont J, McIntyre S (Eds.), 43–60, Ismai publishers, Castelo da Maia.

54) Pereira D, Elfering A (2014) Social stressors at work and sleep during weekends: the mediating role of psychological detachment. J Occup Health Psychol **19**, 85–95.

55) Widmer PS, Semmer NK, Kälin W, Jacobshagen N, Meier LL (2012) The ambivalence of challenge stressors: time pressure associated with both negative and positive well-being. J Vocat Behav **80**, 422–33.

56) Höge T (2009) When work strain transcends psychological boundaries : an inquiry into the relationship between time pressure, irritation, work—family conflict and psychosomatic complaints. Stress Health **25**, 41–51.

57) Lim S, Cortina LM, Magley VJ (2008) Personal and workgroup incivility: impact on work and health outcomes. J Appl Psychol **93**, 95–107.

58) Epstein (1998) Cognitive-experiential self-theory. In:

59) Andersson LM, Pearson CM (1999) Effect of tit for tat? The spiraling effect of incivility in the workplace. Acad Manage Rev **24**, 452–71.

60) Schilpzand P, Leavitt K, Lim S (2016) Incivility hates company: shared incivility attenuates rumination, stress, and psychological withdrawal by reducing self-blame. Organ Behav Hum Decis Process **133**, 33–44.

61) Cortina LM, Kabat-Farr D, Magley VJ, Nelson K (2017) Researching rudeness: the past, present, and future of the science of incivility. J Occup Health Psychol **22**, 299–313.

62) Ohly S, Sonnentag S, Niessen C, Zapf D (2010) Diary studies in organizational research. J Pers Psychol **9**, 79–93.

63) Mehl MR, Conner TS (2012) Handbook of research methods for studying daily life, Guildford Press, New York.

64) Cortina LM, Magley VJ (2009) Patterns and profiles of response to incivility in the workplace. J Occup Health Psychol **14**, 272–88.

65) Cortina LM, Magley VJ, Williams JH, Langhout RD (2001) Incivility in the workplace: incidence and impact. J Occup Health Psychol **6**, 64–80.

66) Ferguson M (2012) You cannot leave it at the office. Spillover and crossover of coworker incivility. J Organ Behav **33**, 571–88.

67) Wilhelm P, Schoebi D (2007) Assessing mood in daily life. Eur J Psychol Assess **23**, 258–67.

68) Barsade SG, Gibson DE (2007) Why does affect matter in organizations? Acad Manage Perspect **21**, 36–59.

69) Rothbard NP, Wilk SL (2011) Waking up on the wrong side of the bed: start-of-workday mood, work events, employee affect and performance. Acad Manage **54**, 959–80.

70) Carlson D, Kacmar KM, Zivnuska S, Ferguson M, Whitten D (2011) Work-family enrichment and job performance: a constructive replication of affective events theory. J Occup Health Psychol **16**, 297–312.

71) Madrid HP, Patterson MG, Birdi KS, Leiva PI, Kausel EE (2014) The role of weekly high-activated positive mood, context, and personality in innovative work behavior: a multilevel and interactional model. J Organ Behav **35**, 234–56.

72) Goldschmidt AB, Wonderlich SA, Crosby RD, Engel SG, Lavender JM, Peterson CB, Crow SJ, Cao L, Mitchell JE (2014) Ecological momentary assessment of stressful events and negative affect in bulimia nervosa. J Consult Clin Psychol **82**, 30–9.

73) Kaplan S, Laport K, Waller MJ (2013) The role of positive affectivity in team effectiveness during crisis. J Organ Behav **34**, 473–91.

74) Sun P, Kong F (2013) Affective mediators of the influence of gratitude on life satisfaction in late adolescence. Soc Indic Res **114**, 1361–9.

75) Story LB, Repetti R (2006) Daily occupational stressors and marital behavior. J Fam Psychol **20**, 690–700.

76) Meeten F, Davey GCL (2011) Mood-as-input hypothesis

and perseverative psychopathologies. Clin Psychol Rev **31**, 1259–75.

77) Tiedens LZ, Linton S (2001) Judgment under emotional certainty and uncertainty: the effects of specific emotions on information processing. J Pers Soc Psychol **81**, 973–88.

78) Mohr G, Rigotti T, Müller A (2005) Irritation—ein Instrument zur Erfassung psychischer Beanspruchung im Arbeitskontext. Skalen—und Itemparameter aus 15 Studien. Z Arbeits Organ Psych **49**, 44–8.

79) Rimann M, Udris I (1997) Fragebogen Salutogenetische Subjektive Arbeitsanalyse (SALSA). ETH Zürich, Zürich.

80) Loi NM, Loh JMI, Hine DW (2015) Don't rock the boat. the moderating role of gender in the relationship between workplace incivility and work withdrawal. J Manage Dev **34**, 169–86.

81) R Core Team (2015) R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna. http://www.r-project.org.

82) Bliese P (2013) Multilevel Modeling in R (2.5). A Brief Introduction to R, the Multilevel Package and the Nlme Package, http://cran.r-project.org/doc/contrib/Bliese_Multilevel.pdf.

83) Enders CK, Tofighi D (2007) Centering predictor variables in cross-sectional multilevel models: a new look at an old issue. Psychol Methods **12**, 121–38.

84) Raudenbush SW, Bryk AS (2002) Hierachical Linear Models. Applications and Data Analysis Methods, Sage Publications, Thousand Oaks.

85) Little TD (2013) Longitudinal structural equation modeling, The Guilford Press, New York.

86) Bauer DJ, Preacher KJ, Gil KM (2006) Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: new procedures and recommendations. Psychol Methods **11**, 142–63.

87) Selig JP, Preacher KJ (2008) Monte Carlo method for assessing mediation: an interactive tool for creating confidence intervals for indirect effects. http://www.quantpsy.org/medmc/medmc.htm.

88) Preacher KJ, Selig JP (2012) Advantages of monte carlo confidence intervals for indirect effects. Commun Methods Meas **6**, 77–98.

89) Volmer J, Binnewies C, Sonnentag S, Niessen C (2012) Do social conflicts with customers at work encroach upon our private lives? A diary study. J Occup Health Psychol **17**, 304–15.

90) Demsky CA, Ellis AM, Fritz C (2014) Shrugging it off: does psychological detachment from work mediate the relationship between workplace aggression and work-family conflict? J Occup Health Psychol **19**, 195–205.

91) Podsakoff NP, LePine JA, LePine MA (2007) Differential challenge stressor-hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: a meta-analysis. J Appl Psychol **92**, 438–54.

92) Lazarus RS, Folkman S (1984) Stress, appraisal, and coping, Springer, New York.

93) Bollen K, Lennox R (1991) Conventional wisdom on measurement: a structural equation perspective. Psychol Bull **110**, 305–14.

94) Cropley M, Michalianou G, Pravettoni G, Millward LJ (2012) The relation of post-work ruminative thinking with eating behaviour. Stress Health **28**, 23–30.

95) Neuman JH (2004) Injustice, stress, and aggression in organizations. In: The Dark Side of Organizational Behavior, Griffin RW, O'Leary-Kelly AM (Eds.), 62–102, Jossey-Bass, San Francisco.

96) Foulk T, Woolum A, Erez A (2016) Catching rudeness is like catching a cold: the contagion effects of low-intensity negative behaviors. J Appl Psychol **101**, 50–67.

97) Davey GCL, Startup HM, MacDonald CB, Jenkins D, Patterson K (2005) The use of "As Many As Can" versus "Feel Like Continuing" stop rules during worrying. Cognit Ther Res **29**, 155–69.

98) Martin LL, Ward DW, Achee JW, Wyer RS (1993) Mood as input: people have to interpret the motivational implications of their moods. J Pers Soc Psychol **63**, 317–26.

99) Querstret D, Cropley M, Kruger P, Heron R (2016) Assessing the effect of a Cognitive Behaviour Therapy (CBT)-based workshop on work-related rumination, fatigue, and sleep. Eur J Work Organ Psychol **25**, 50–67.