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Beyond one work day? A daily diary study on causal and reverse effects between experienced workplace incivility and behaving rude towards others

Tim Vahle-Hinz[a], Anja Baethge[b] and Rolf Van Dick[c]

[a]Occupational Health Psychology, Humboldt University Berlin, Berlin, Germany; [b]Psychological Institute, Johannes Gutenberg University Mainz, Work-, Organizational-, and Businesspsychology, Mainz, Germany; [c]Institute of Psychology, Goethe University Frankfurt, PEG, Frankfurt, Germany

ABSTRACT

In this diary study with $N = 348$ employees, we examine whether the contagion effect of workplace incivility transfers beyond one work day that is whether the experience of workplace incivility is related to showing rude behaviours towards others the next day. Additionally, we examine whether ruminating in the evening of a work day and building an intention for revenge behaviour mediate this relationship, and explore whether a serial mediation process exists where experienced incivility triggers ruminative thoughts, which, in turn, increase the likelihood of intending to act, which transfers into actual rude behaviour the next day. Using a multilevel path analysis, our results confirmed a lagged relationship between workplace incivility one day and rude behaviours towards others the next day. Between-persons' workplace incivility was also related to showing rude behaviour towards others. Neither rumination nor revenge behaviour intent proved to be mediators of this relationship. Additionally, the serial mediation process was not confirmed; however, parts of the process—namely the relationship between experienced workplace incivility and ruminating about work in the evening—received support. Importantly, the reverse relationship (i.e., showing rude behaviour one day leads to experiencing workplace incivility the next) was not supported in our analysis. By adding a new, daily time perspective, our study suggests that participants do not intentionally provoke episodes of incivility, but rather react to others' incivility.

Workplace incivility is a low-intensity social stressor that can harm employees' well-being (Cortina, Magley, Williams, & Langhout, 2001). From the target's perspective, workplace incivility is experienced as rude behaviour from co-workers, customers, or supervisors. Often, however, the target is left with doubt whether this experienced behaviour was actually meant to be rude, and this ambiguity may cause additional stress. According to Andersson and Pearson (1999), incivility at the workplace is characterized by two defining qualities: low intensity and ambiguous intent to harm. Past research has shown that these seemingly petty negative behaviours towards co-workers or subordinates have detrimental effects on their well-being (Hershcovis, 2011), and subsequent behaviours at the workplace, such as more counterproductive work behaviour (Penney & Spector, 2005), lower organizational citizenship behaviour (Taylor, Bedeian, & Kluemper, 2012), or lower in-role performance (Porath & Erez, 2007). To explain how these seemingly minor events at the workplace can spiral into more severe forms of workplace aggression, Andersson and Pearson (1999) introduced the incivility spiral. In the core of their argument lies the idea that the experience of incivility can also lead to displays of incivility oneself, which can then turn into a spiral between the interaction parties over time—via negative affect and the desire to reciprocate or retaliate—and can lead to overt aggressive behaviours. Indeed, Foulk, Woolum, and Erez (2016) conducted multiple experimental studies, which showed that

experiencing rude behaviour can spread through the organization like a common cold.

In the present paper, we investigate whether experiencing workplace incivility is related to showing rude behaviours to others in the organization. Specifically, we are interested in whether the relationship between experiencing workplace incivility and showing rudeness towards others persists over the time frame of one day. In order to address our research question, we conducted a daily diary study over five consecutive work days, and investigated the relationship between daily workplace incivility with showing rude behaviour towards others both on the same and on the subsequent day. Additionally, we aim to investigate a mechanism of how the experience of workplace incivility transfers into showing rude behaviours towards others over time. Therefore, we test work-related rumination and revenge behaviour intent as possible mediators. Furthermore, we explore a serial mediation process in which work-related rumination cognitively prolongs the experience of workplace incivility, and by triggering the intent towards revenge, transfers the daily experience of workplace incivility into showing rude behaviour the next day.

Our study advances previous research in two ways: First, a recent event-sampling study suggested that the relationship between experienced incivility with instigated incivility against the perpetrator is rather short lived (i.e., it lasts for less than two and a half hours after the incivility is experienced; Meier &

CONTACT Tim Vahle-Hinz ✉ tim.vahle-hinz@hu-berlin.de

Gross, 2015). So it might be that the chronic experience of workplace incivility leads to counterproductive work behaviours (Andersson & Pearson, 1999), but if some time elapses between the measurement of experienced incivility and behavioural responses, the occasional experienced incivility (e.g., on a daily basis) does not. However, we argue that there might be mechanisms that prolong the negative effects of experienced workplace incivility, and therefore help to maintain negative effects of the short-lived experience: rumination and revenge behaviour intent. We argue that the specific experience of incivility during the workday leads employees to generally ruminate about work longer in the evening, and to building an intention to get even, which then translates into being rude towards others the next day (Brosschot, Pieper, & Thayer, 2005; Jones, 2009; Lian et al., 2014; Wang et al., 2013). Thus, we propose that work-related rumination and revenge behaviour intent mediate the relation between experienced workplace incivility and prospective rude behaviour. Investigating mediators in the relationship between workplace incivility and behavioural outcomes is in line with recommendations to expand research on workplace incivility provided in a systematic literature review by Schilpzand, De Pater, and Erez (2016). Also, building on Meier and Gross (2015) work, Rosen, Koopman, Gabriel, and Johnson (2016) showed that self-control functioned as a mediator in the relationship between experienced and instigated incivility within a work day. We aim to advance the literature by investigating the effects beyond one work day, and by examining mechanisms explaining the relationship between experiencing workplace incivility one day, and showing rude behaviour towards others the next day.

Second, previous research aimed at examining the incivility spiral and investigated the relationship between workplace incivility and counterproductive work behaviours (e.g., showing rude behaviour) either cross-sectionally (Penney & Spector, 2005) or longitudinally, with a time lag of one (Matthews & Ritter, 2016) or two months (Meier & Spector, 2013). Although the cross-sectional study and the longitudinal study with a one-month time lag supported the proposed relation between workplace incivility and counterproductive work behaviours (Matthews & Ritter, 2016; Penney & Spector, 2005), the longitudinal study with a time lag of two months did not find such a relation, but a reverse effect (Meier & Spector, 2013). This may suggest that incivility triggers subsequent negative behaviour only after a short time lag. Using a daily diary design and investigating immediate effects (on the same day) and short-term lagged effects (on the subsequent day), our study investigates the relationship between workplace incivility and rude behaviour at the workplace with a new time perspective. A smaller time frame enables us to gain an impression of the initial step of the workplace incivility spiral. A short time can provide a clearer picture of what happens when incivility actually occurs compared to cross-sectional or longitudinal studies, which examine more chronic effects. This is because workplace incivility is not only considered a chronic stressor, but also a daily hassle (Sliter, Jex, Wolford, & McInnerney, 2010), and our study provides insights into whether the incivility spiral also applies to the daily context. Thus, we

follow the notion of Meier and Spector (2013), who assumed that the potential effects of experienced incivility might be short lived due to its low intensity. Therefore, the authors suggested that future studies should focus on short time lags to test the incivility spiral in more detail (Meier & Spector, 2013, p. 536). Simultaneously, our design offers the possibility to investigate more stable between-person effects with a time span of one week, for the relationship of workplace incivility and showing rude behaviour towards others. Therefore, the data structure helps answer the question of whether the effect is rather short term (within-person effect) or more stable (between-person effect; Ilies, Aw, & Pluut, 2015).

Next, we review the literature on the relationship between workplace incivility and counterproductive work behaviours, and hypothesize concurrent (on the same day) and lagged effects (on the subsequent day). Then we go on by explaining possible mechanisms that transfer occasional experienced workplace incivility (on a daily basis) into showing rude behaviours on the next day. We will also discuss the possibility of reverse effects (showing rude behaviour at the workplace leading to more experienced workplace incivility).

Workplace incivility and counterproductive work behaviours

In a review of the literature, Schilpzand et al. (2016) showed that workplace incivility is related to a number of counterproductive work behaviours, such as withdrawal behaviour, reciprocation, retaliation, or deviant behaviours (see also Bunk & Magley, 2013; Cortina, Kabat-Farr, Magley, & Nelson, 2017; Kim & Shapiro, 2008; Penney & Spector, 2005). Why are employees who experience workplace incivility more likely to respond with rude behaviour themselves? Experiencing workplace incivility is an affront to one's dignity because this behaviour violates norms such as politeness or respect (Andersson & Pearson, 1999; Lim, Cortina, & Magley, 2008). Principles of social exchange (Blau, 1964), which suggest that reciprocity is a major factor in shaping social interactions, and the general idea of a sense of justice (Colquitt & Greenberg, 2001), lead to the assumption that experiencing workplace incivility can result in showing rude behaviour towards the perpetrator because it is viewed as a justified means of reciprocation (Meier & Gross, 2015). However, there is also evidence that experiencing or even witnessing workplace incivility can be related to rude behaviour that is directed at others and not only directed towards the perpetrator (Foulk et al., 2016; Porath & Erez, 2009; Taylor et al., 2012). The studies presented by Foulk et al. (2016) have shown that experiencing rudeness leads to showing rudeness towards others (not necessarily the perpetrator), and that even a single event can lead to such a contagion effect. As an explanation, Foulk et al. (2016) presented and supported hypotheses based on the semantic network. Their study showed that experiencing rudeness activates semantic nodes associated with rude behaviour, which, in turn, makes rude responses to colleagues more accessible and more likely (Foulk et al., 2016). Thus, if an employee experiences other people acting rudely on one day, he or she will likely immediately respond with similar

behaviour. Based on these theoretical explanations and empirical evidence, we hypothesize that:

Hypothesis 1: Daily experienced workplace incivility is positively related to showing rude behaviour towards others the same day (within-person concurrent effect).

Empirical evidence supports the relationship between experiencing workplace incivility and behaving rudely towards others (Foulk et al., 2016). So, the incivility spiral or the contagion effect is likely to start as an immediate response to the incivility treatment. However, it might also be true that experiencing incivility leads to rude behavioural reactions later in time. Indeed, a longitudinal study using a time lag of one month supports this proposition (Matthews & Ritter, 2016). However, less is known about the lagged effects of more short-term and fluctuating experiences of workplace incivility (e.g., on a daily level). So the question we are addressing is whether a short-lived experience of workplace incivility can transfer to behavioural responses later in time (one day after the experience of workplace incivility). It is important to know whether an incivility spiral can be expected to start immediately after the experience of workplace incivility or whether this could also happen later in time, with possibly no overt connection to the actual starting event. A recent event-sampling study suggested that the relationship between experienced incivility and instigated incivility against the perpetrator is rather short lived (see Meier & Gross, 2015).

Although the study by Meier and Gross (2015) showed that the time lag between experienced and instigated incivility is rather short, we expect a lagged relationship between experienced workplace incivility and showing rude behaviours towards others the next day. This is because showing uncivil behaviour might need an opportunity, which may lead to delays in showing revenge behaviour. Additionally, in their first study, Foulk et al. (2016) showed that experiencing rude behaviour during a negotiation leads to showing rude behaviours towards other partners in a time-separated negotiation. Thus, the study by Foulk et al. (2016) has suggested that, without testing a specific time frame, it is possible for experienced incivility to be related to rudeness towards others over time. We hypothesize accordingly:

Hypothesis 2: Daily experienced workplace incivility is positively related to showing rude behaviour towards others the next day (within-person lagged effect).

Workplace stressors can vary within-persons (on some days, stressors are more intense than on others) and between-persons (some people are faced with more intense stressors than others; Sonnentag & Fritz, 2015). Daily diary studies offer the possibility to investigate these two different effects simultaneously. So far, we have proposed the relationship between short-lived experienced workplace incivility and showing rude behaviour, thereby addressing the within-person level of analysis. This is in accordance with recommendations by Schilpzand et al. (2016), highlighting the importance to advance previous research in workplace incivility by investigating short-term effects (p. 65). However, the majority of research concerning workplace incivility is based on rather stable or chronic effects (Taylor, Bedeian, Cole, & Zhang, 2014). This research showed that outcomes differ if employees experience more incivility than other employees, and thus work in an environment that is characterized by chronic exposure to incivility. This is important because chronic exposure to incivility is associated with several important outcomes, such as reduced well-being, higher turnover intentions, and lower performance (Cortina et al., 2017; Schilpzand et al., 2016). In the present study, the between-person effect highlights that employees working in an environment that is characterized with higher workplace incivility are more likely to be rude towards others. Thus, regular experiences of uncivil encounters on a day-to-day basis might seem negligible, but they can produce a climate of incivility, where those who experience rudeness respond with rudeness themselves. Therefore, in addition to the within-person relationship, we will also address the between-person relationship. In our daily diary study, the between-person effect highlights the more stable weekly effect of experienced workplace incivility on showing rude behaviours towards others. We expect a positive between-person effect because perpetrators of uncivil behaviour at the workplace are usually not punished by the organization, as this kind of behaviour is not registered or reported by the victims (Cortina & Magley, 2009). Being more stably exposed to uncivil behaviour that is not punished by the organization may lead to the impression that such behaviour is acceptable. In turn, this might prompt employees to behave accordingly (see also Meier and Spector (2013) for a similar argumentation). If single events of workplace incivility provoke revenge, as assumed in Hypothesis 1, it is conceivable that such mechanisms become chronic and also emerge on the between-person level. Employees who are exposed to uncivil behaviour more frequently than others will likely show ruder behaviours themselves. Accordingly, we hypothesize:

Hypothesis 3: Between-person differences in the experience of workplace incivility are positively related to showing rude behaviours towards others (between-person effect).

Rumination and revenge behaviour intent as mediators

Uncivil behaviour spreads through the organization like a common cold (Foulk et al., 2016). In order to stop the transmission of experiencing rude behaviour to showing rude behaviour, it is important to understand what mediates this relationship. In this section, we outline that workplace incivility may indirectly relate to showing rude behaviours the next day via rumination and revenge behaviour intent. Furthermore, we explore whether rumination and revenge behaviour intent are interrelated, and whether the indirect effect between workplace incivility and showing rude behaviours towards others can be conceptualized as a serial mediation process. Figure 1 highlights our model, where we propose an indirect effect between workplace incivility and showing rude behaviours towards others via rumination (see path a1*b1 in Figure 1) and/or via revenge behaviour intent (see path a2*b2 in Figure 1). Additionally, our model proposes a serial mediation effect, where rumination leads to revenge behaviour
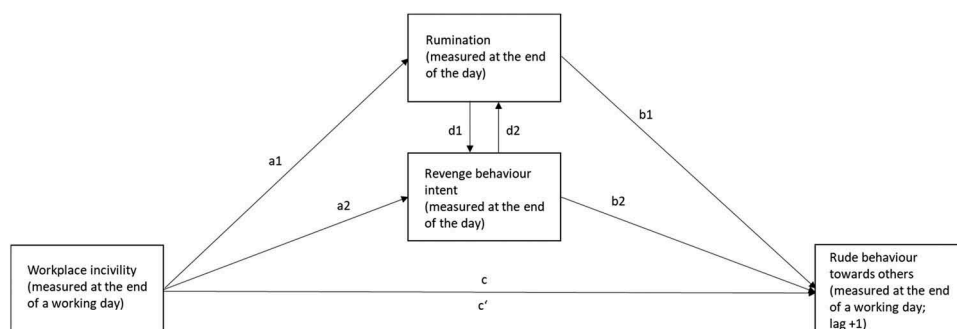
Figure 1. Conceptual model of the proposed mediational processes.

intent ($a1*d1*b2$). However, as we will outline later, the ordering of this serial mediation effect is not clear, and a serial mediation effect where revenge behaviour intent leads to rumination ($a2*d2*b1$) is also plausible. Therefore, we will empirically explore the ordering of effects.

We argue that experienced workplace incivility is transferred beyond the day of experience via increasing the likelihood of rumination after work. Work-related rumination is a cognitive representation of a stressful event at work that is accompanied by negative emotional feelings (Cropley, Michalianou, Pravettoni, & Millward, 2012; Querstret & Cropley, 2012). The importance of rumination within the stress literature stems from its ability to prolong the effects of a stressful experience beyond the immediate presence of the stressor (Brosschot et al., 2005; Glynn, Christenfeld, & Gerin, 2007; Pieper, Brosschot, van der Leeden, & Thayer, 2010). Ruminating about work is due to the heightened accessibility in one's memory of information regarding a goal-threatening or goal-failing event at work (Rothermund, 2003; Wang et al., 2013). Experienced workplace incivility can lead to ruminative thoughts about work because it goes in line with humiliation (Lim et al., 2008), which represents a threat to one's goal to preserve a positive self-evaluation (Semmer, Jacobshagen, Meier, & Elfering, 2007). Additionally, due to the ambiguous intent to harm, employees experiencing workplace incivility have to rely on their own insight to figure out the meaning of this experience (Chan & McAllister, 2014), which, in turn, makes ruminative thinking more likely.

Chan and McAllister (2014) stated that the experience of workplace aggression (such as incivility; see Hershcovis, 2011) can trigger rumination (which they describe as an aspect of paranoid cognitions), which, in turn, leads to showing rude behaviours at the workplace (e.g., being aggressive towards others). For example, ruminating after work might lead the target of incivility to allocate cognitive resources for monitoring and processing threat-related information. The next day, the employee might be especially sensitive to any disrespectful behaviour and resort to rude behaviour themselves in order to protect oneself against humiliation (Chan & McAllister, 2014). Accordingly, rumination might serve as a trigger for retaliation when an opportunity to do so arises.

Hypothesis 4: There is an indirect relationship between experienced workplace incivility and showing rude behaviours towards others the next day via work-related rumination (within-person

mediation effect, path $a1*b1$ in Figure 1). Specifically, we expect a positive relationship between workplace incivility and work-related rumination (path a1 in Figure 1) which is in turn positively related to showing rude behaviours towards others the next day (path b1 in Figure 1).

From motivational psychology, it is well known that in order to cross the bridge between the intention for a behaviour (motivation) and the actual performance of that behaviour (volition), one needs to develop the intention to act (Heckhausen & Gollwitzer, 1987; Webb & Sheeran, 2007). Previous research offers some empirical evidence supporting a relationship between experienced workplace incivility and revenge behaviour intent. For example, Jones (2009) showed that interpersonal injustice (which shares some conceptual overlap with workplace incivility), as opposed to procedural justice, is related to the intention for revenge. In a longitudinal study, Lian et al. (2014) showed that abusive supervision is positively related to feeling hostile towards one's supervisor. Additionally, both studies highlight that the intention to show revenge is associated with actually exerting retaliation behaviour (Jones, 2009; Lian et al., 2014). Based on previous research, we hypothesize:

Hypothesis 5: There is an indirect relationship between experienced workplace incivility and showing rude behaviours the next day via revenge behaviour intent (within-person mediation effect, path $a2*b2$ in Figure 1). Specifically, we expect a positive relationship between workplace incivility and revenge behaviour intent (path a2 in Figure 1) which is in turn positively related to showing rude behaviours towards others the next day (path b2 in Figure 1).

Previously, we hypothesized rumination and revenge behaviour intent to be parallel mediators in the relationship between experienced workplace incivility and showing rude behaviours towards others the next day. However, the proposed mediating variables (rumination and revenge behaviour intent) might also be interrelated and represent a serial mediation effect. For example, more ruminative thoughts in the evening do not necessarily lead to showing rude behaviours the next day because the thoughts are not put into action (Heckhausen & Gollwitzer, 1987). However, brooding about work in the evening can relate to forming an intention to retaliate because the semantic network of bad treatment is

more easily accessible in one's memory (e.g., Foulk et al., 2016) even if the event itself is no longer present (Glynn et al., 2007). Accordingly, experienced workplace incivility might lead to revenge behaviour intent via rumination (see path a1*d1 in Figure 1), and this ultimately explains how experienced workplace incivility relates to showing rude behaviours towards others the next day (see path a1*d1*b2). However, the reverse cannot be ruled out. Feeling treated badly leads to the wish to get even (see Hypothesis 5), which heightens the accessibility of information regarding bad treatment in the memory of the employee, facilitating rumination (see path a2*d2 in Figure 1). Ruminating then prolongs these effects (Pieper et al., 2010), and ultimately leads to rude behaviour the next day (see path a2*d2*b1). Therefore, both pathways are plausible, and we will explore these differential ordering of effects within our data set by addressing the following research questions:

> Research Question 1: Is there a (positive) serial indirect effect from workplace incivility to showing rude behaviour the next day via first, rumination, and then, revenge behaviour intent (see path a1*d1*b2 in Figure 1)?

> Research Question 2: Is there a (positive) serial indirect effect from workplace incivility to showing rude behaviour the next day via first, revenge behaviour intent, and then, rumination (see path a2*d2*b1 in Figure 1)?

The other way around: reverse effect

The incivility spiral highlights that experiencing workplace incivility can lead to showing rude behaviour (Andersson & Pearson, 1999). However, the incivility spiral also suggests that showing rude behaviour makes it more likely to experience workplace incivility subsequently (see also Penney & Spector, 2005). Additionally, this is not restricted to the parties directly involved (Foulk et al., 2016). Foulk et al. (2016) showed that experienced incivility spreads to an organization like a flu virus, as targets of rude behaviour act rudely towards others. Therefore, having shown rude behaviour makes it more likely to experience rude behaviour oneself in turn. Finally, in a longitudinal study with a two-month time lag, Meier and Spector (2013) found support for a reversed effect, showing that counterproductive work behaviour acted as a predictor of experienced workplace incivility over time. A longitudinal study of one month could not support such a reverse effect (Matthews & Ritter, 2016). Thus, longitudinal studies could not unambiguously determine the direction of the effect. Probably

a closer look at the start of the process of experiencing workplace incivility and counterproductive work behaviour could solve this problem. Therefore, we additionally test our proposed hypotheses on the direct relationship (Hypotheses 1 and 2), as well our hypotheses of the indirect relationships (Hypotheses 4 and 5) in the opposite direction, suggesting that although experienced workplace incivility can lead to showing rude behaviour, the reverse is also true.

Methods

We conducted an online diary study over five consecutive work days (Monday to Friday). Every day, participants received two time-separated emails: at the end of each work day and in the evening of that same day. Times at which emails were sent were customized to fit employee's preferences and work times. Prior to the daily assessments, participants responded to a baseline questionnaire and provided sociodemographic data. Participant's data were matched across the different measurement points using personalized links.

Respondents were recruited through a convenience sampling approach whereby the authors and their students approached their network. Requirement for participation was full-time work, regular contact with colleagues and leaders, and not working in shifts. In total, 408 participants were invited to take part in the current study, and 391 participants responded at least once to our invitation, which reflects a response rate of 95.8%. Fourteen participants were excluded because they identified themselves as students. A total of 348 participants provided data of daily rude behaviour towards others on 1,395 days (response rate is 80.2%) and were thus used to address the direct relationship between workplace incivility and showing rude behaviours towards others. To analyse our proposed mediation effect, participants also had to respond the evening survey in order to provide data on our mediators (rumination and revenge behaviour intent). A total of 315 participants provided data of work-related rumination in the evenings of the same days on 1,259 days (response rate is 79.9%), and 314 participants provided data of revenge behaviour intent in the evening of the day on 1,257 days (response rate is 80.1%), and were thus used to address our mediation hypotheses. Please note that some correlations presented in Table 1 are based on data from 350 employees. This is due to different numbers of missing values in different scales.

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

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Sex	1.49	0.50	–								
2. Age	37.63	11.76	−.10	–							
3. Daily work hours	7.81	2.06	−.33	−.06	–	−.01	−.01	.00	.05	.01	.08
4. Experienced workplace incivility	1.25	0.62	.01	.01	.00	–	.31	.39	.22	.34	.31
5. Experienced workplace incivility the next day	1.26	0.63	−.02	.01	−.03	.97	–	.10	.35	.22	.27
6. Rudeness towards others	1.17	0.61	.04	−.08	.05	.61	.55	–	.11	.17	.11
7. Rudeness towards others the next day	1.18	0.62	.02	−.08	.02	.53	.53	.97	–	.18	.25
8. Work-related rumination	1.77	0.94	.16	−.01	.04	.47	.45	.27	.24	–	.39
9. Revenge behaviour intent	1.19	0.76	−.01	−.01	.11	.45	.45	.25	.25	.48	–

Note. Correlations below the diagonal are person-level correlations (N = 295–350) with correlations r ≥ .12 being significant at p < .05 and r ≥ .16 being significant at p < .01. Correlations above the diagonal are day-level correlations (N = 858–1401) with correlations r ≥ .09 being significant at p < .01. All correlations are based on uncentred variables. Please note that differences in N of the person-level are due to different numbers of missing values in different scales.

Fifty-one per cent of the participants were male, and the mean age was $M = 38$ years (ranging from 18 to 64 years, $SD = 11.76$). Most of the participants had a higher education degree (61%) and had completed university (38%) or occupational training (34%). Participants came from a variety of occupations, with the majority working in engineering (30%), followed by the service (11%) and health sector (11%). Participants had worked for their current employer on average for $M = 11$ years ($SD = 10$ years). Weekly work hours were, on average, $M = 36.7$ hours ($SD = 6$ hours), and daily work hours were on average $M = 7.8$ hours ($SD = 2$ hours) on the measurement days.

Measures

Workplace incivility

Workplace incivility was measured with five items of the workplace incivility scale of Cortina et al. (2001). A sample item is "During this day, I have been in a situation in which one of my supervisors or colleagues made insulting or disrespectful remarks about me." Answers were given on a 7-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). Cronbach's alpha ranged from .82 to .90 (mean = .84).

Rude behaviour towards others

Rude behaviour towards others was measured with one item out of the counterproductive workplace behaviour scale of Yang and Diefendorff (2009). The item is "Today I acted rudely towards a supervisor or colleague." Answers were given on a 7-point Likert-type scale (1 = strongly disagree; 7 = strongly agree).

Work-related rumination

Work-related rumination was measured with the affective rumination scale of Cropley et al. (2012), comprising five items. An example is "Did you become tense today when you thought about work-related issues during your free time?" Answers were given on a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree). Cronbach's alpha ranged from .90 to .93 (mean = .92).

Revenge behaviour intent

Revenge behaviour intent was measured with one item of the revenge thoughts scale of Bradfield and Aquino (1999). The item is "I am going to get even." As an introduction, we wrote that we were interested in the thoughts one could have about acting towards supervisors or co-workers. Answers were given on a 7-point Likert-type scale (1 = strongly disagree; 7 = strongly agree).

Control variables

We included sex and age as controls because younger males tend to commit more acts of deviance (Hollinger & Clark, 1983). We also controlled for working hours, because longer days are related to fatigue and resource depletion, which may serve as an alternative explanation for heightened levels of rumination and rude behaviour (intentions).

Analysis

Our data have a hierarchical structure, with days nested in persons. To test our proposed relationships, we conducted multilevel path analysis using Mplus 8. We began by testing unconditional means models in order to verify that there was sufficient within-person variability to support multilevel analyses. The Intraclass correlation (ICC)1 values for showing rude behaviour towards others (ICC1 = .16), work-related rumination (ICC1 = .65), revenge behaviour intent (ICC1 = .50), and workplace incivility (ICC1 = .27) showed that a multilevel analysis was indicated.

To test for the direct relationship between workplace incivility and showing rude behaviour towards others (Hypotheses 1, 2, and 3), we specified a multilevel path analysis where showing rude behaviour towards others was predicted by workplace incivility on the same day (concurrent effect), and workplace incivility measured the previous day (lagged effect). Additionally, at the between-level of analysis, we specified a direct relationship between-person differences in workplace incivility predicting person differences in showing rude behaviour towards others. In order to test for possible reverse effects, we also specified the opposite relationships, that is, showing rude behaviours towards others (concurrent effect) predicting workplace incivility, and showing rude behaviours towards others the previous day predicting workplace incivility (lagged effect). To compare these causal and reverse effect models in the causal effect model, the reverse paths were fixed to zero, and in the reverse effect model, the causal paths were fixed to zero.

To test for within-person relationships, we centred our predictors around each person's mean, which removed all between-persons variances (Ohly, Sonnentag, Niessen, & Zapf, 2010). Additionally, to test for between-person relationships, we used the grand-mean centred person mean of our predictors. Day-level control variables (level 1) were person-mean centred, and the person-level control variable age (level 2) was grand-mean centred whereas sex was not centred. To investigate whether our independent variables predicted a change in our dependent variables, we controlled for previous days' ratings of the dependent variable (lag −1) in all analyses.

To test for indirect effects (see Figure 1), we adapted a half-longitudinal model (Little, 2013) and investigated whether a change in the mediator (controlling for the previous day's ratings of the mediator; lag −1) mediated the relationship between the independent variable with a change in the dependent variable (controlling for the previous day's rating of the dependent variable; lag −1). We tested for the significance of the indirect effects with the Monte Carlo Method adapted for multilevel data (Bauer, Preacher, & Gil Karen, 2006; Selig & Preacher, 2008). This procedure performs similarly to other bootstrap methods and can be used within multilevel frameworks (Preacher & Selig, 2012).

Results

Table 1 shows the means, the standard deviations, and correlations between all study variables. All correlations are in the expected direction.

Direct between- and within-person effects

The causal effect model in Figure 2 shows the results of our multilevel path analysis, specifying our proposed causal effects. The fit of the model was good (χ^2 = 1.997, df = 2, p = ns, Comparative Fit Index (CFI) = 1.00, Tucker-Lewis Index (TLI) = 1.00, Root Mean Square Error of Approximation (RMSEA) = .00, Standardized Root Mean Square Residual (SRMR)$_{within}$ = .01, SRMR$_{between}$ = .00). As can be seen, workplace incivility was a significant positive predictor of showing rude behaviours towards others at the between- and within-person level of analysis ($\gamma_{concurrent\ within}$ = .29, p < .05, $\gamma_{between}$ = .58, p < .01). Therefore, Hypotheses 1 and 3 were supported. Additionally, in Hypothesis 2, we tested whether the experience of workplace incivility one day can spill over into showing rude behaviour towards others the next day. The path between workplace incivility the previous day (lag −1) with showing rude behaviour was significant and positive ($\gamma_{lagged\ within}$ = .16, p < .05). This result highlighted that the experience of workplace incivility was related to showing rude behaviour towards others the next day, supporting Hypothesis 2. It should be noted that the effect of previous days' ratings of experienced workplace incivility on daily workplace incivility, and the effect of previous days' ratings of showing rude behaviour towards others and daily showing rude behaviour towards others are negative. This is due to the centring method employed (person-mean centering).

Mediation

Figure 3 summarizes the results of a multilevel path analysis specifying the proposed indirect effects. The model showed a good fit to the data (χ^2 = 11.756, df = 8, p = ns, CFI = .98, TLI = .89, RMSEA = .03, SRMR$_{within}$ = .02, SRMR$_{between}$ = .01). It should be noted that a model including the d2 path showed a worse fit (χ^2 = 27.39, df = 8, p < .001, CFI = .87, TLI = .41, RMSEA = .06, SRMR$_{within}$ = .04, SRMR$_{between}$ = .03) compared to the model presented in Figure 3, including only the d1 path. Therefore, Figure 3 presents the results of the model including the d1 path only.

At the between-person level of analysis, results show that between-person differences in experienced workplace incivility were positively related to between-person differences in work-related rumination, revenge behaviour intent, and rude behaviours towards others. Persons who experience more incivility compared to others ruminate more about work, have a stronger intention for retaliation, and show ruder behaviour towards others.

At the within-person level of analysis, results showed that experiencing more workplace incivility (measured at the end of a work day) compared to ones' average experienced over the work week was positively related to general work-related rumination in the evening of that day. The proposed relationship between experienced workplace incivility (measured at the end of the work day) with revenge behaviour intent (measured in the evening of that day) was not significant.

Table 2 summarizes the significance tests of all indirect effects, specified in Figure 1. The results showed that the indirect effects of workplace incivility on showing rude behaviour the next day via work-related rumination (*point estimate a1*b1* = 0.007, 95% confidence interval (CI) [−0.010, 0.023]) or revenge behaviour intent (*point estimate a2*b2* = 0.005, 95% CI [−0.039, 0.032], path) were not significant. Therefore, our results could not support a parallel mediation, and Hypothesis 4 and 5 have to be rejected.[1] It should be noted that the reported effects remained stable if running the presented model without control variables.

In Research Questions 1 and 2, we explored a serial mediation effect, with rumination and revenge behaviour intent mediating the relationship between workplace incivility and being rude towards others the next day (see paths a1*d1*b2 (Research Question 1) and a2*d2*b1 (Research Question 2) in Figure 1). Our results showed that both possible serial mediation effects were not significant (*point estimate a1*d1*b2* = 0.002, 95% CI [−0.004, 0.010]; *point estimate a2*d2*b1* = 0.000, 95% CI [−0.001, 0.001]). Further the exploration of indirect effects revealed that neither the indirect effect of workplace incivility on rumination via revenge behaviour intent nor the indirect effect of workplace incivility on revenge behaviour intent via rumination was significant. As shown in Table 2, the a1*d1 effect was significant on the 90% CI. However, as the
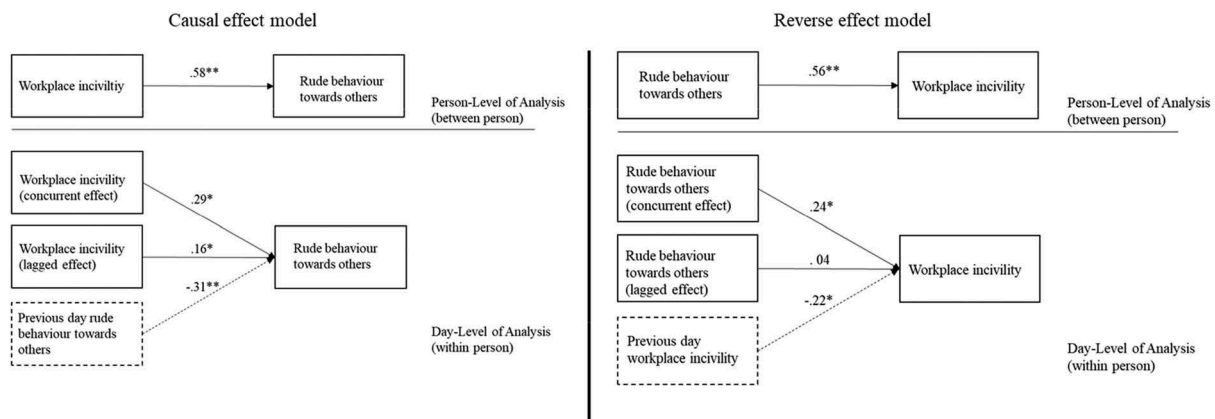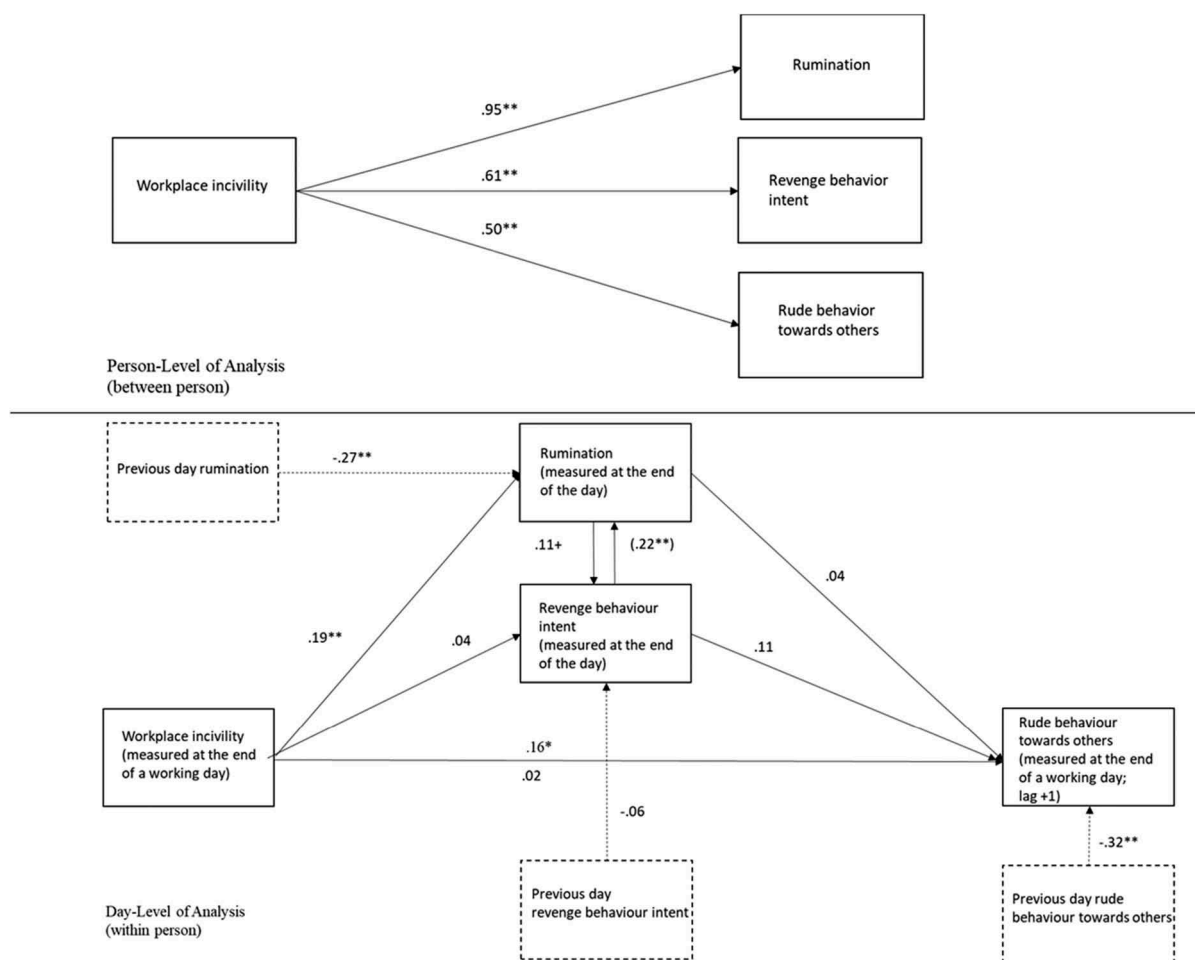

Figure 2. Results of multilevel path analysis of the causal and reverse effect model. We controlled for sex and age at the between-person level of analysis; working hours were controlled at the between- and within-person level of analysis. *p < .05; **p < .01.

Figure 3. Results of multilevel path analysis testing the proposed mediational effects. We controlled for sex and age at the between-person level of analysis; working hours were controlled at the between- and within-person level of analysis, () effect not included in the final model because inclusion leads to a decline in model fit. $+p < .10$; $*p < .05$; $**p < .01$.

Table 2. Summary of indirect effects.

Mediation	Point estimate of indirect effect	95% CI	90% CI
Workplace incivility on rude behaviour towards others the next day via rumination (path a1*b1)	0.007	[−0.010, 0.023]	[−0.006, 0.020]
Workplace incivility on rude behaviour towards others the next day via revenge behaviour intent (path a2*b2)	0.005	[−0.039, 0.032]	[−0.028, 0.026]
Workplace incivility on revenge behaviour intent via rumination (path a1*d1)	0.020	[−0.002, 0.041]	[0.001, 0.039]
Workplace incivility on rumination via revenge behaviour intent (path a2*d2)	0.006	[−0.038, 0.034]	[−0.028, 0.028]
Serial mediation effect 1 (path a1*d1*b2)	0.002	[−0.004, 0.010]	[−0.003, 0.009]
Serial mediation effect 2 (path a2*d2*b1)	0.000	[−0.001, 0.001]	[−0.001, 0.001]

Note. All mediational models follow a half-longitudinal design (Little, 2013). Therefore, the indirect effect highlights that the independent variable predicts a change in the mediator, which predicts a change in the dependent variable.

direct relationship between rumination and revenge behaviour intent was not significant, no mediation was supported. It should be noted, however, that we could support a mediation in a more parsimonious model, excluding showing rude behaviour towards others from the analysis.[2]

Causal or reverse relationship

Figure 2 shows the results of a causal effect model (where reverse paths were fixed to zero) and the results of a reverse effect model (where causal paths were fixed to zero). Both models show a good fit to the data (fit of the causal effect

model was: $\chi^2 = 1.997$, $df = 2$, $p = $ ns, CFI = 1.00, TLI = 1.00, RMSEA = .00, $SRMR_{within}$ = .01, $SRMR_{between}$ = .00; fit of the reverse effect model was: $\chi^2 = 5.401$, $df = 2$, $p = $ ns, CFI = .95, TLI = .71, RMSEA = .05, $SRMR_{within}$ = .03, $SRMR_{between}$ = .00). As can be seen, the lagged effect of workplace incivility on showing rude behaviours towards others the next day was significant ($\gamma_{lagged\ causal\ within}$ = .16, $p < $ .05), whereas the lagged effect of showing rude behaviours towards others on experiencing workplace incivility the next day was not significant ($\gamma_{lagged\ reversed\ within}$ = .04, $p = $ ns.). This analysis provided support for a causal relationship of experienced workplace incivility one day leading to rude behaviour towards others the next day. For a time lag of one day, the reverse effect was not supported by our data. It should be noted that the reported effects remained stable if running the presented model without control variables; however, we did observe a change in model fit. The model fit of the causal effect model was better compared to the fit of the reverse effect model, when control variables were included (see earlier text). When excluding control variables, however, differences in model fit diminished and showed that the reverse effect model fitted the data slightly better compared to the causal effect model (causal effect model without control variables $\chi^2 = 9.808$, $df = 2$, $p < .001$, CFI = .90, TLI = .70, RMSEA = .06, $SRMR_{within}$ = .03, $SRMR_{between}$ = .00; reverse effect model without control variables $\chi^2 = 8.380$, $df = 2$, $p < .001$, CFI = .92, TLI = .77, RMSEA = .06, $SRMR_{within}$ = .04, $SRMR_{between}$ = .00).

We also tested a reverse version of the model shown in Figure 3, where being rude towards others related to experienced workplace incivility the next day via rumination and revenge behaviour intent. Compared to the model shown in Figure 3, the fit of this model was inferior ($\chi^2 = 21.94$, $df = 8$, $p < .01$, CFI = .92, TLI = .62, RMSEA = .05, $SRMR_{within}$ = .04, $SRMR_{between}$ = .01), and no direct relationships between being rude towards others and rumination or revenge behaviour intent were detected.

Discussion

The results of our study supported a between-person effect, as well as a within-person concurrent *and* lagged effect, of experienced workplace incivility on showing rude behaviours towards others. None of the proposed mediation mechanisms received support. However, the first part of the explored serial mediation effect (i.e., the direct relationship between workplace incivility with work-related rumination) received some initial support.

We found a significant within-person concurrent effect, showing that higher experienced workplace incivility, compared to one's average experience over the work week, is related to being rude towards others on the same day (Hypothesis 1). This highlights that even day-to-day fluctuating and short-term experienced incivility make it more likely to respond rudely towards others. Thus, experienced workplace incivility does not have to be a stable characteristic of the work environment to be related to rude behaviour towards others. Even small encounters on a daily basis that exceed the person's average experience can be sufficient for spreading rude behaviours within the organization. Thus, the proposed incivility spiral (Andersson & Pearson, 1999) is

likely to start on a daily basis. This is in line with previous research, showing that incivility encounters within one work day are related to instigated incivility that day (Meier & Gross, 2015; Rosen et al., 2016).

Our significant within-person lagged effect advances previous research. The effect showed that experiencing higher incivility one day (compared to one's average experience) is related to showing ruder behaviour towards others the next day (Hypothesis 2). This effect highlights that the relationship between experiencing and showing rude behaviour oneself is not restricted to the actual work day, but can occur the next day. Additionally, the reverse effect (showing rude behaviours towards others leading to experiencing workplace incivility) was only supported for the present day, but not for the next day. This result is important for two reasons: First, from a practical point of view, rude behaviour that occurs well after the experienced initial incivility event might be particularly worrisome. If an employee behaves rudely towards his/her colleagues, but the colleague knows that the employee just came from a bad meeting with their supervisor, the rude behaviour might be attributed to this event. However, if an employee behaves rudely towards his/her colleague one day after the bad meeting, this link might be less overt. This is in line with attribution research, which demonstrated that temporally more distant events are remembered at a higher construal, more abstract level (Semin & Smith, 1999; Trope & Liberman, 2003, 2010). That means that possibly the content of the bad meeting (e.g., assignment of new tasks) will be remembered, but not peripheral interpersonal events that happened during the meeting (e.g., impolite behaviour towards the person who acts rudely the next day). The result might be that the experienced (next day) rude behaviour is taken more personally, and thus causes stronger reactions (e. g., being rude to others).

Second, from a theoretical point of view, adding a new (daily) time perspective advances previous research by offering new insights into the temporal relationship between workplace incivility and counterproductive work behaviours. Considering different temporal patterns helps to understand the process by which variables are related (e.g., Ployhart & Vandenberg, 2010). For example, the longitudinal study with a two-month lag could not establish a causal relationship between workplace incivility and counterproductive work behaviours (Meier & Spector, 2013). However, the authors found a reverse relationship in their data, suggesting that counterproductive behaviours are related to more experienced workplace incivility over time. By contrast, the longitudinal study with a one-month time lag could support the causal relationship between workplace incivility and counterproductive work behaviours, but was unable to confirm a reverse relationship (Matthews & Ritter, 2016). Thus, studies which examine longer time frames and investigate a longer exposure to the stressor workplace incivility could not unambiguously determine the direction of the effect. To get an impression of the initial step of the workplace incivility spiral, a smaller time frame is necessary. Our study shows that for the daily context, a causal relationship (i.e., the experience of workplace incivility leading to showing rude behaviours) is more likely than the reverse effect. This would

also suggest that incivility hardly ever occurs because no one really starts it. However, incivility is a phenomenon frequently reported (Cortina et al., 2001; Van Dierendonck & Mevissen, 2002). To detangle these seemingly contradicting issues, we suggest that behaving rude or uncivil might in some cases be oblivious to the instigator of the incivility event, but salient in the perception of the victim. So maybe the incivility spiral is started by accident and not with an intentional act. This is underlined by the theoretical definition of the incivility construct as a behaviour with an ambiguous intent to harm (Andersson & Pearson, 1999). Furthermore, research on self-serving appraisals suggests that one's own rude behaviour is not necessarily classified as such (Helmond, Overbeek, Brugman, & Gibbs, 2015). Thus, we suggest that, from the perspective of the individual, the workplace incivility spiral probably starts with experiencing workplace incivility and not with one's own intentional provoking behaviour.[3]

The between-person effect highlights that employees working in an environment that is characterized with higher workplace incivility were more likely to be rude towards others (Hypothesis 3). Thus, regular experiences of uncivil encounters on a day-to-day basis can produce a climate of incivility, where those who experience rudeness respond with rudeness themselves. This result is in line with previous research showing that a work environment that is characterized by chronic exposure to incivility is associated with several important outcomes, such as reduced well-being, higher turnover intentions, and lower performance (Cortina et al., 2017, 2001; Schilpzand et al., 2016). However, it should be noted that the stable between-person differences in workplace incivility are based on a weekly assessment in this study. Arguably, a weekly effect is more stable than a daily effect (see within-person relationship), but less stable than previously investigated effects of five years (Cortina et al., 2001) or two months (Meier & Spector, 2013). However, our result is in line with Matthews and Ritter (2016), who showed a positive effect of a two weeks' time frame measurement of experienced workplace incivility with counterproductive work behaviour. Furthermore, the results presented in Figure 2 show that at the between-person level of analysis workplace incivility was related to showing rude behaviours towards others, and that the reverse, showing rude behaviours towards others was related to workplace incivility, was also true. However, these effects do not represent time-separated measures in the way that the experience of one weeks' workplace incivility related to showing rude behaviour towards others the following week. Therefore, no definitive conclusions can be made about the ordering of effects at the between-person level of analysis.

In the present study, we used the multilevel structure of our data to simultaneously investigate within-person and between-person relationships. Most research on workplace incivility is based on cross-sectional between-person differences (Cortina et al., 2017). However, adapting a purely between-person perspective on experienced workplace incivility may mask considerable variance of the phenomena (Taylor et al., 2014). Furthermore, investigating experienced

workplace incivility without disentangling the effects at the between- and within-person level can lead to biased results, because differences in variances and correlations on both levels result in a biased overall correlation (see for example Hamaker, 2012). Our results showed that when employees experience more workplace incivility than usual (which suggests that an event of acute incivility has taken place that day, within-person), they show ruder behaviour on the same day and the following day and they ruminate more on the same day. These effects are largely replicated at the between-person level of analyses, which confirmed the relationship between workplace incivility and showing rude behaviours towards others in both directions. So in conclusion, the simultaneous investigation of the within- and between-person effect broadens our view of the phenomena as it shows that more stable exposure to workplace incivility is related to showing rude behaviours more often, and regardless of the overall exposure, seemingly neglectable daily experiences of workplace incivility (which do not have to be particularly strong per se) are also relevant for acute (and lagged) rude reactions.

In addition to the proposed direct effect, we suggested and tested mediations, explaining why employees who experience workplace incivility one day, might react with showing rude behaviours towards others the next day. Contrary to our hypotheses, the parallel indirect effects linking experienced workplace incivility one day with showing rude behaviours towards others the next day, via work-related rumination and revenge behaviour intent, were not significant. Thus, the results of our study do not support our assumption as to why incivility one day leads to showing rude behaviours next day. In addition, we explored the possibility of a serial mediation effect, where experienced workplace incivility relates to rumination or revenge behaviour intent, and rumination relates to an intent for revenge (Research Question 1) or an intent for revenge relates to rumination (Research Question 2), which ultimately relates to showing rude behaviour the next day. Our results did not confirm such a serial mediation effect. Only the direct relationship between workplace incivility and work-related rumination was supported. These results have implications for future research. First, contrary to our assumptions, the formation of neither an intention nor the work-related rumination was related to rude behaviours towards others next day. Arguably, having an intention for revenge and possibly picturing how one would tell of the person who was rude to oneself can be enough to adjust oneself to the situation at work, without the necessity of actually behaving rudely. In line with that, the meta-analysis of Kish-Gephart, Harrison, and Treviño (2010) challenges the necessity that a(n unethical) behaviour follows the intent. Furthermore, our operationalization of revenge behaviour intent might have been too specific, and implies that one is getting even with the instigator of the experienced incivility. This would weaken the effect of revenge behaviour intent with showing rude behaviour towards others who are not necessarily the instigator. Rumination in the evening was also not related to being rude towards others next day. This is not in line with the suggestions made by Chan and McAllister (2014). However, the authors also suggest that rumination might be related to other counterproductive work behaviours (e.g., withdrawal).

Future studies could benefit from including other counterproductive work behaviours into the analysis.

Second, the results of our study show that experienced workplace incivility has a spillover effect into non-work time, as it was positively related to work-related rumination. This result is important because the relationship between workplace incivility and off-work outcomes suggests that recovery processes are inhibited (Zijlstra & Sonnentag, 2006), which, in turn, is important for performance (Binnewies, Sonnentag, & Mojza, 2009), and employees' health (Geurts & Sonnentag, 2006; Sonnentag, Binnewies, & Mojza, 2008). Only a few studies have shown a spillover effect of daily workplace incivility on off-work outcomes (Nicholson & Griffin, 2015). Therefore, our study adds to this limited evidence.

Besides the between-person effect of experienced workplace incivility with showing rude behaviours towards others, our analyses also revealed significant within-person relationships (see Figures 2 and 3). These results complement previous research on workplace incivility, which was mainly conducted at the between-person level of analysis (Cortina et al., 2017; Taylor et al., 2014), and highlight the detrimental effects of this low-intensive social stressor (Cortina & Magley, 2009; Ferguson, 2012; Lim & Lee, 2011).

Limitations

This study has some limitations that should be considered when interpreting the results. First, with regard to workplace incivility, the literature shows that the status of the instigator (supervisor or colleague) is relevant for the effects of workplace incivility (Cortina et al., 2001; Lim & Lee, 2011). Additionally, Penney and Spector (2005) suggested that conflicts with a co-worker are more likely to be related to interpersonal counterproductive work behaviour (e.g., showing rude behaviours towards others), whereas conflicts with a supervisor are more likely to be related to organizational counterproductive work behaviour (e.g., doing your work incorrectly on purpose). Therefore, we cannot rule out that our results might be different if the status of the instigator is considered.

Second, we restricted our outcome variable to one specific counterproductive work behaviour, namely showing rude behaviours towards others. Both longitudinal studies that investigated the relationship between workplace incivility and counterproductive work behaviour measured interpersonal counterproductive work behaviour (e.g., "cursed at someone at work") and organizational counterproductive work behaviour (e.g., "taken property from work without permission"; Matthews & Ritter, 2016; Meier & Spector, 2013). Matthews and Ritter (2016) reported that the lagged effect between experienced workplace incivility on interpersonal counterproductive work behaviour was stronger than the lagged effect on organizational counterproductive work behaviour, whereas Meier and Spector (2013) could not confirm a causal relationship of workplace incivility. However, the correlations in their study also reported a stronger relationship between workplace incivility and interpersonal counterproductive work behaviour. Additionally, Jones (2009) found support for specific relationships between different justice facets

and counterproductive work behaviours, showing that interpersonal injustice is more likely to be related to interpersonal counterproductive work behaviour. Accordingly, for our study, it seemed feasible to investigate the relationship between experienced workplace incivility and showing rude behaviours towards others. Future research could nevertheless benefit from assessing several counterproductive work behaviours.

Third, we used single-item measures to assess revenge behaviour intent and rude behaviours towards others. Single-item measures have the disadvantage that reliability cannot be estimated, and that the representation of the underlying construct may be deficient. However, we believe that the two items used in this study have high content validity regarding the represented constructs and that using a single-item measure is therefore justified (Fisher, Matthews, & Gibbons, 2016). We chose the item "I acted rudely towards a supervisor or colleague" because it was more general than other rude behaviour items. There are not many possibilities within one day to act rudely towards others; therefore, we chose a very general expression of rude behaviour, which is not too special or intensive (instead of "covering up a mistake" or "starting an argument", Yang & Diefendorff, 2009). For our purpose "I am going to get even" was a good revenge behaviour intent item because it is not too strong and it entails the plan to do something (instead of "I will take revenge" or "I wished something bad will happen to them", Bradfield & Aquino, 1999).

Fourth, we measured overall rumination and not rumination in relation to the act of incivility, but our argumentation refers to rumination in relation to the act of incivility. Future studies should measure a more accurate version of rumination. Nevertheless, we found a significant effect of workplace incivility on rumination although we used this general version which presumably shares some variance with other stressors. Thus, our results provide clear evidence of the relationship between workplace incivility and rumination.

Fifth, we used a convenience sampling approach to gather our data. This might have resulted in a biased sample. However, recent research suggests that the external validity of student recruited samples is acceptable (Wheeler, Shanine, Leon, & Whitman, 2014). Additionally, our sampling approach resulted in a large sample, which is important for identifying lagged effects (Ford et al., 2014).

Practical implications

The results of our study support a relationship between workplace incivility and showing rude behaviours towards others at the between- and within-person level of analysis. A practical implication that can be drawn from this result is that not only a work environment that is characterized of a stable incivility climate (between-person effect), but also short-term and fluctuating incidents of incivility (within-person effect) warrant organizational action in order to prevent the spreading of rude behaviour within an organization. A real challenge for interventions to reduce short-term incivility events is to establish possibilities, and the belief that it is necessary to report these seemingly negligible encounters between colleagues, and between employees and their

supervisors. Additionally, the within-person relationship between workplace incivility and showing rude behaviours towards others shows that actions are not only necessary when incivility events are particularly strong. To foster rude behaviours towards others, it is enough if the incivility event is an above average experience of an employee, regardless of its overall strength.

The within-person relationship between experienced workplace incivility (measured at the end of the work day) and work-related rumination (measured at the end of the day) highlights that the experience of workplace incivility can influence how employees feel at home. Negative feelings at home that are due to workplace stress disrupt the recovery process and are threating to individuals' health. Therefore, in order to prevent long-term health effects of workplace incivility, cognitive trainings that help employees to detach from work while at home are necessary (e.g., Querstret, Cropley, Kruger, & Heron, 2016).

Conclusion and directions for future research

In the present study, we could show that on a daily basis, the incivility spiral is likely to start with experienced incivility and not with showing rude behaviours, and that experienced incivility even translates to the next days' behaviour, with less overt connection to the cause of the incivility. The results suggest that participants do not intentionally provoke episodes of incivility, but rather react to others' incivility. Future research could benefit from identifying triggers of workplace incivility other than other individuals' social behaviour (Schilpzand et al., 2016). Work characteristics, such as high time pressure, illegitimate tasks, or performance constraints, might provide a promising starting point.

Our proposed mediation effects did not receive support. Therefore, future research is needed to investigate different mechanisms. For example, Rosen et al. (2016) proposed and supported a mechanism from experienced incivility to instigated incivility via reduced self-regulatory resources for within-work day relationships. For future research, it might be interesting to test whether this proposed mechanism can be applied to the relationship between experienced workplace incivility one day and showing rude behaviours towards others the next day.

Analysing the mechanism that translates the experienced incivility to showing rude behaviours oneself assists in the understanding of why this contagion effect happens. However, investigating moderators of the relationship between experienced incivility and showing rude behaviours towards others helps to identify factors that might break this vicious circle (e.g., organizational climate or organizational justice) and represents a fruitful future research endeavour. Personality variables that make showing rude behaviours less likely (e.g., introverted personality) might also be of interest. Additionally, variables that effect the way incivil behaviour is attributed might also function as potential moderators that buffer the effect from experienced incivility to showing rude behaviours towards others (e.g., construal level).[4]

Notes

1. Please note that we also tested the indirect effect of rumination and revenge behaviour intent in separate analyses. These tests also did not support significant indirect effects.
2. Most of the proposed indirect effects were not supported by our results. We conducted a *post hoc* analysis investigating a moderated mediation model as an alternative explanation, suggesting that the proposed indirect effect of experiences workplace incivility on showing rude behaviours towards others the next day via revenge behaviour intent is dependent on the level of rumination (we thank an anonymous reviewer for this suggestion). We tested this alternative model with rumination acting as a level 1 moderator and the aggregated mean value of rumination as a level 2 cross-level moderator. In both cases, we could not support a moderation effect. Results are not shown, but can be requested from the corresponding author.
3. We thank an anonymous reviewer for pointing out this puzzling interpretation and providing suggestions on how to solve this.
4. We thank two anonymous reviewers for these suggestions.

Disclosure statement

No potential conflict of interest was reported by the authors.

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